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Art at the Antipodes.

IT is sometimes refreshing to the sense to turn the eyes, after a too-long poring over things close at hand, upon fresh objects wider afield. Our vision after such a change generally returns with a quickened feeling of appreciation, opened fully to the merits and demerits of that on which it had been previously incessantly but unprofitably concentrated. Let us, therefore, put such a change to the test of experience, and turn our gaze for a time from art at home to art at the antipodes.

There we shall find several considerable and wealthy vice-regaldoms, full of energy and enterprise, which have sprung into existence, like Minerva from the brain of Jupiter, perfect in organisation and in form. We shall, therefore, not be surprised at discovering that the colonies of New South Wales and of Victoria have, like the old country, their Academies of the Fine Arts and their National Galleries,—National Galleries, however, not of works of the Old Masters, as in the mother country, but of living English painters. The colonists are wise in their generation, and cannot see the force,—the logical consistency,—of collecting works of art which are utterly at variance with the spirit of the age, and of exhorting students to copy them, when they know that the prospects in life of any art-student who should unfortunately listen to such advice would be *nil*. The colonists, therefore, resolved, in this case, not to follow the example of their respected parent, but to gather together examples of modern art, more especially of the English school. They resolved also,—a very wise determination,—that, should they at any time desire to have works to remind them of the art of the past, they would obtain copies of the most celebrated pictures by the old masters.

We have no precise information as to the dates of the establishment of an Academy of the Fine Arts, and of a National Gallery, at Melbourne, but we may gather from the "Victoria Year-Book" that there was, in the city of Melbourne in 1874, a school of painting in connexion with the National Gallery, which was attended by three male and twenty-four female students, and that there was also a School of Design, which was in the same year attended by fifty-four male and 135 female students. We may just note, too, a very remarkable fact, that the proportions of the sexes of the students of art to each other are the very reverse of those in the mother country.

The National Gallery is in the same building as the Melbourne Public Library; it contained, at the end of 1874, 69 oil paintings, 158 statues and works of art, and 3,650 water-colour drawings, engravings, photographs, &c. The general public are admitted without charge on week-days, between the hours of noon and five p.m. in summer, and noon and four p.m. in the winter. The number of works collected shows that the Victorian Government's vote for the purchase of works of art must have been considerable; and it may serve to show the spirit in which the colonists have ventured upon their art enterprise if we state that they commissioned Mr. Herbert, R.A., to paint a picture of the value of 1,700*l*. Since 1874 a new and handsome gallery has been built by the Government. It contains, amongst other works, the "Departure of the Pilgrim Fathers," by C. W. Cope, R.A.; "Rachael at the Fountain," by F. Goodall, R.A.; "A Question of Propriety," by E. Long, A.R.A.; and landscapes by F. Lee, R.A., Webb, Mogford, Lewis, and others.

The art movement in Sydney is of more recent date than that of Melbourne. It springs from a very genuine love of art; for these colonial centres have not only their own excellent educational institutions, but men of culture from all parts of Europe, brought together either in the pursuit of mercantile or professional affairs. The institution of the Sydney Academy of the Fine Arts is mainly due to the energy exerted in the cause by Messrs. E. L. Montefiore, E. Combes, J. H. Thomas, C.E.; E. Du Faur, the indefatigable hon. sec., and some others. It has now, for several years, been in working order. The Academy possesses a fine collection of casts from the antique. There are classes for the study from the antique and from the life. Its founders desired to have the services of a properly trained master from South Kensington to direct its working; but that intention is, on account of the limited funds at their disposal, at present in abeyance. The drawing and modelling departments are now confided to the teaching of two Italian artists. There are, periodically, competitions, when certificates of merit are awarded to the successful student competitors. It is even proposed that there shall be an annual award of medals. Designs for a silver medal have already been asked for.

Sydney, like Melbourne, has also its incipient National Gallery, founded by the council of the Academy of Arts. The New South Wales Legislative Assembly has already voted several money grants,—2,000*l*. in all,—in furtherance of this project, and a London committee of selection has been appointed to purchase works of art, which it has done to the extent the grants permitted. This committee, we think, acted very wisely in setting apart 100*l*. for the purchase of autotypes from the finest works by the old masters. This collection of autotypes will, in itself, form an interesting exhibition, even if the collection of modern works should soon eclipse it.

The Committee of Selection has chosen many excellent specimens of our water-colour painters, and also some few oil pictures. In its purchases of oil paintings there is one very notable example, a host in itself,—we mean Mr. Madox Brown's large and fine picture of "Chaucer reading his Poems before John of Gaunt." The colonists will, doubtless, be very proud of the possession of this work, which no future historian of English art can ever overlook. But neither Sydney nor Melbourne must rest contented with what it has already done. Neither must abate in either the energy or liberality which they have displayed in this good cause, and which will, doubtless, be crowned, not only with admirable results, but with the applause of the world at large.

We have but to glance at the architecture of the Australian cities to be moved to prophesy that these antipodal vice-regaldoms will one day make a great mark in art. Architecture has there become regenerate. There is a vitality and appreciation of proportion about it which takes us back to ancient Greece. Does change of hemisphere favourably affect the minds of men, as the change of attention, we have previously alluded to, the over-strained eye? It is very possible that it may. The Australian Colonies are lands full of light,—lands in which the sun shines, and not only shines, but may be seen every day. They furnish, therefore, the eye-inspiring element, and we have prospective either an antipodal Greece or Italy. For, if the influence of the change of hemisphere has in so short a space of time produced such marked improvement in the feeling for architecture as is seen, we may reasonably expect that the two younger arts will overtake and keep pace with their elder sister.

It is most satisfactory to notice that in these new colonies art is assuming its proper politico-economical position; it is, in fact, being developed to popular demand. It is not in Australia to be forced upon the people under the mistaken notion that taste may be propagated by inoculation from Grecian and Italian art. Let us fervently hope that Victoria and New South Wales may be preserved from too much talk about art,—from that too-much talk and too-little thought which afflicts everything at home, and from the misleading of amateurs and rhapsodists, who turn by their ink-and-water sophistries the current of steady progress aside into all kinds of quaint, eccentric eddies. If the colonies should be able to escape these dangers, they will have no work to undo, and thus art-progress will be uninterrupted. Let them be advised to turn their Australian genius at once towards mural decoration, towards the decoration of all their great architectural works, as the Greeks and Italians did; for this, as it was shown by Mr. Cave Thomas at the Social Science Congress, is the key to the most thorough kind of art-education. It was the devotion of art to the embellishment of public edifices which made the art of Greece and Italy so

pre-eminently superior to that of modern times, and which enabled the ancients to imbue their manufactures with beauty. Let us, therefore, counsel the Colonial Legislatures to devote, from time to time, liberal grants of money to the embellishment of their public edifices. Home artists might be found who would lead the way, and to direct the art-talent of these fine colonies into its right channel. If these colonies can only resolutely follow the path indicated, they will in a few years have the satisfaction of finding that their art-status will at least align with, if it does not even take the precedence of, that of the mother country.

THE STREET NOMENCLATURE OF LONDON.

FROM week to week London is enforced to alter the names of its minor thoroughfares. So long as the process is confined to suburban novelties and vulgarities, the process need not be complained of; but a disposition appears, on the part of the Metropolitan Board of Works, to monotonise, if we may so term it, the street nomenclature of London, and to substitute a new ostentation for an old one. We will not claim to share the antiquarian spirit which, in certain cities of the North, would, for the sake of historical reminiscences, preserve "Murderer's-lane," or "Hang-dog-alley," or, as at Halifax, "Gibbet-row." But, in London especially, apart from its outspreading dependencies, so to call them, we have a world of tradition, or chronicles, connected with the ways by which one citizen is enabled to meet or find another in the great living wilderness of the nineteenth century. The mysteries, or rather complexities, of this labyrinth have been partly unlocked by successive indices to "the streets and places of the metropolis," ordered to be printed by the Metropolitan Board of Works since 1868; but the entire result does not represent a tithe of the curiosities in the way of nomenclature which the British capital has still to exhibit. Without being tempted into antiquarianism, we would suggest an inquiry into the significance of the Old Bailey, Fore and Watling streets, the Old Kent and the Great Dover roads. Have they not histories associated with them? Of course, as surely as "the Roman Road" signified a conquest in a former time. But, coming within the gates, which we beg the Metropolitan Board of Works to treat not disrespectfully, we find a history written, in the most distinct of characters, upon, as Mr. Kemble says, every marsh, hill, stream, and ford, and populous district of houses. Well, the Board of Works must not interfere with any of this. It may turn Cooper's-corner into Townsend-lane, or Gilbert's-grove into Showman's-alley, as it pleases; but let its invasions stop short of historical London,—of, to begin with, Finsbury, Fenchurch, and Moorfields; of the Tower, Cornhill, and Ludgate; of Walbrook, Holborn, Clerken-well, Holy-well, and St. Clement's Well. These are among the mosaics of our local tradition, and not to be trampled out of memory. Let it be borne in mind that the archæologists have very little, if anything, to to do with the question in hand. It matters nothing what interest they take in the various wells,—St. Clement's, Chad, Bride, Clerken, or Sadler, or that long known as the Holy, or the others called Muss, or Bagnigge, or Coldbath, or Camber, or Stock. Very few persons are concerned in routing up their own family histories; very few, again, care to understand why they can find their way so easily from one part of the metropolis to another. As the years go on, naturally they meet with new names,—Victoria-street, Cannon-street, Belgrave-street, and so forth; but these are additions: they are not substitutions; they displace nothing. What, however, would be thought of this all-embracing Board of Works were it, entering within the Westminster and City precincts, to tear down, from each familiar wall its tutelary word,—*clarum et venerabile nomen*,—the name of the street? The chroniclers assure us that Fetter-lane was a centre of forgery, and hence so-called; that St. Martin's-le-Grand represented a disgraceful mendicant imposture; and that Cripplegate gave rise to more trickeries than were ever practised within the walls of "The Court of Miracles" in Paris. Still, why should local history lose its colour on that account. It is true that we have, in a great measure, justified this irreverence by our neglect of historical etymology in the matter, allowing Channel to become Cannon-row; Vine-garden, Vinegar-yard; Duke's Foot-lane, Duck's Foot-lane; Mart, Mark; and Three-needle, Threadneedle; though the last is not so much of a degradation, after all. But, upon the whole, the Londoners have been faithful to their local traditions, and would not change the ancient style at the bidding of any Board whatever. They will keep their Lothbury, their London-wall, their Finsbury, and Fenchurch; and all their other saintly relics. Helen's, Botolph's, Dunstan's, Benets, Clement's, and Lawrence, though row and then allowing of a strange transmogrification,—as, for example, that of Baynard's Watering into Bayswater, and the Lady Clapa into Clapham. Let us leave Stepney alone; it was a perplexity when Domesday Book was compiled, and let us see how the Metropolitan Board of Works will improve upon the records in that golden volume. Going on, however, it is not, as yet, threatened to change the names of districts,—though nobody knows what may come in time,—such as Camberwell, Shadwell, and Stockwell, Tyburn, Kilburn, Marylebone, Westbourne, Pimlico, or Chelsea; but if ever the Board gets its grip within the City boundaries, might it not put impertinent questions concerning Aldgate, Ludgate, and Cripplegate, themselves? In and out of the City there are remembrances to be cherished:—Great Coram-street, in memory of the admirable man in whose honour it was named; Black and White and Austin (or Augustine) Friars, and the Broad Sanctuary, on account of the historical chapters attaching to them; Spitalfields, in memory of a most noble and charitable lady; Battle Bridge, in commemoration of an interesting, if not exceedingly worthy, community of monkish idlers; and Bevis Marks, which ought to have been in the close neighbourhood of St. Paul's, and is not. St. Paul's, however, has its peculiar group,—Paul's-chain, Paternoster-row, Amen-corner, Ave Maria-lane, and so forth. We read old London history, moreover, in Rochester-row, London House-yard, Bishopsgate, Chichester-rents, Saffron-hill, and Vine-street. But the Board, however it may undo the present, cannot bring back the past. It cannot restore the brilliant aspects of Bethnal-green as it was known to the subjects of the first King Edward; it cannot restore to us the "pleasant fields" of Whitechapel, or "the open downs of Hackney," or "the shady lanes of Poplar," or even "the military pass" at Tyburn, erected against "the robbers who infested the deep morass and wild heath which are now Belgravia and Vincent square." So far the change has been beneficial, because the characters of the localities, together with their names, have been altered; but we may be forgiven, perhaps, for clinging to such historical appellations of places as Westmoreland, Warwick, and Northumberland; Norfolk, Suffolk, and Worcester; with Lincoln, Furnival, and Clifford; and the humbler yet even more interesting associations of Rotherhithe, Lambeth, Queenhithe, Cornhill, Leadenhall, the Cheapes, Bread-street, Mark-lane, the Poultry, Pudding-lane, Fish-street-hill, and Friday-street, so called, says Stowe, "from the fishmongers dwelling there, and serving Friday's market." Not for any consideration should these, which might be designated as the "corner words" of the London Chronicles, be disturbed. Candlewick tells us of the wax-chandlers who sold lights for altars in the days when the Pope had his votaries far and wide throughout the land. We can all of us read a page of the past in the titles of Soper-lane (now Queen-street), Cheapside; Cordwainer, Cutler, Hosier, Inkborn, Bridge, Skinner, Founder, Tokenhouse, Sermon, Sea-coal, Pipe, Patent, and Trump streets, lanes, courts, yards, or "rolls," as the case may be; and the Board of Works, should it ever invade the City, must not dare to assail a single one of them. Not the Old Jewry itself, nor Jewin-street, not even Poor Jewin-lane. It matters not that much historical significance is evaporated beneath the drying-up process of time; that Lombard-street is no longer what it originally was; that the Steelyard tells only an ancient tale; that the "Tower Royal," as a thoroughfare, no longer "pertains to the kings of this realme"; that the Vintry is not now exclusively appropriated by wine-merchants, or that the Boulogne Gate—perverted into Bull-and-Gate—represents no more conviviality and conquest in one. We might as well regret Hangman's Gains, though famous in its day. But the point is to let these antiquities absorb themselves into the past without being violently blotted out, and to keep green such annals as we may; such, for example, as those of Bucklersbury, Farringdon, Bassishaw and Basinghall, Crosby and Cullum,—all archives, taken severally or apart; but of little account in the sight of rehabilitating Boards, who would as ruthlessly pull down the escutcheons of Wentworth and Oxford, Sussex and Brandon, Newcastle and Albemarle, Chandos and Berkeley, as they would any one of the ninety-nine King-streets and seventy-five Queen-streets which existed only a few years ago in this loyal yet uninventive London of ours. Their innovations are resisted, however, and it is chiefly the ambitious builder of the suburban district who finds his glory fallen, and Cooper-corner, or Gilbert-grove, converted into an insignificant Number 65 in Diorama-road. Bedfordbury, Brydges-street, Chandos-street, Tavistock and Southampton-streets, Howard, Arundel, Surrey, and Norfolk-streets, Somerset House, Scotland-yard, and Whitehall, have each and all preserved their historical appellations, with Warwick-place, Theobald's-road, Leicester-square, Sidney-alley, "Piccadilla," and Copenhagen-fields. And why, and how? After the Fire, "the jealousies of the citizens caused but few to recede from their claims to particular localities, and the old lines of thoroughfare were, accordingly, retained. The result, fatal as it was to the magnificent designs of renovation, suggested by Evelyn and Wren, beyond doubt, rescued much of the historical interest of early London from oblivion. Old associations, kept alive and strengthened in adversity by the *religio loci*, still clung to blackened ruins, and the names of their former possessors lingered on the site, long after the place was diverted to other uses." So with the names of streets. We shall never again see a time like that in which "foreign princes were carried to see Bloomsbury-square as one of the wonders of England." Still, that is no reason for booking it in a new name; or Soho either. We cannot even part easily with Birdcage-walk, or Cockpit-lane, or Pall-mall,—certainly not;—or Richmond-terrace, or Downing-street, or St. Alban's-place (re-christened in honour of Waterloo), or Mayfair. There is one magic about Cheyne-walk, and another about Craven-hill. We may give over to the stenciller three-fourths of the "Kings," two-thirds of the "Queens," half of the "Princes," "Regents," "Charleses," "Alberts," and "Georges"; but every alteration should be questioned closely, and no name which tells a story, confirms history, or suggests matter for wholesome thought should be given up.

MANAGEMENT OF THE ROYAL PARKS.

WITHIN the late year some changes have been silently carried out in the royal parks, with respect to their general management, and more improvements are contemplated, and are at present under the consideration of her Majesty's Board of Works. Some months ago a number of defects, and what many people hesitated not to call abuses, were brought under the attention of the Board, and of course through that body they finally came under the notice of the Government. One of the first evidences of a change in the usual conduct and management of the parks was the appointment of an officer or officers to act as pay-clerks at the different parks, on a stated day weekly. For long years previously the payment of the gardeners, park-keepers, and labourers devolved upon the superintendents or head gardeners at each park. Last summer the above officials and their deputies were relieved from their customary duties in this respect, and a pay-clerk was appointed to attend at the parks to pay each man, according to the returns furnished by the superintending park officials. Rumour was busy at the time in assigning cause for the change, but it is sufficient for us to state that the new method has been found to work more satisfactorily, and, it is believed, will ultimately prove more economical than the old system, in connexion with which abuses were allowed to exist. Another change, and not a less remarkable one, is now being carried out by the appointment of a Chief Superintendent, or Bailiff, of the Royal Parks. The appointment has been conferred upon a military officer of the grade of captain, whose duty it will be to act as the deputy of the Chief Commissioner of Works in the matter of the business government and management of the royal parks. Heretofore, the different park superintendents acted directly with the Board of Works, but henceforward the bailiff will be superior to them, and an officer above them, occupying a middle place between the ordinary park superintendent and the First Commissioner.

The new appointment in some quarters is looked upon with disfavour, and no doubt it is unpalatable to the former park superintendents, who for long years exercised large discretionary powers and not a few beneficial privileges. In horticultural circles the new appointment of parks bailiff has excited some jealousy and angry feeling, because the new officer was not selected with a view to special horticultural qualifications. When it is considered that each of the royal parks has superintendents who are practical gardeners, as well as head-gardeners, deputy-gardeners, and a staff of working gardeners and assistants, it may be urged that special horticultural knowledge was not particularly requisite in the holder of the new appointment. Be that as it may, the appointment is now made, and the necessity for some such an arrangement was pointed out some time since by a writer in these pages. During the late year considerable improvement has taken place in the general management of more than one of the royal parks, and closer attention paid to the gardening wants and to the meeting of the requirements of the visitors in securing a peaceful recreation and healthful enjoyment. Much, however, yet remains to be accomplished before the parks are placed on an eminently satisfactory footing. It is reported that the holders of the larger privileges, in connexion with the royal parks, such as the ownership of boats let out for hire for rowing or pleasure parties, at so much an hour, and those other privileges, as in the East-end park, in the matter of swings and merry-go-rounds, will be subject to a change. In the Crystal Palace grounds and other public places of entertainment large sums are paid yearly by owners of like appliances to those seen in the royal parks.

Some time ago it was contemplated to introduce the metropolitan police into Battersea and Victoria parks, as in Hyde Park, and do away with the parkkeepers. In the case of Battersea the outside public looked with disfavour on the contemplated change, and the residents in the vicinity protested: so the scheme was allowed to drop. Previously to this contemplated change at Battersea, a paper, or notice, was circulated among the parkkeepers in Victoria Park asking all the men who were willing to transfer themselves to the ranks of the police to sign their names. The document got the cold shoulder from the men, who came to the conclusion not to surrender their appointments, as parkkeepers, without such guarantee as would secure them the pensions they would be entitled to as parkkeepers at the end of a stated time. As the Board of Works, or the First Commissioner at that time, would not promise a guarantee, the men withheld their signatures, except in a few instances; so the question of the introduction of the metropolitan police into Victoria Park, like that at Battersea, was dropped for the time. We believe that it was long felt as a grievance by the parkkeepers of all the royal parks, who of late years are mostly men who have served some years in the army, that they were not at home in having a gardening official over them. They preferred a military head or superior, to whom their inspector or other representative could appeal in case of need. Their wishes are at last gratified in the person of the new official.

In connexion with this subject we have a word or two to say as to Rotten Row, in Hyde Park. Who has the management of the road-making here? The operations have been going on for months, and heaps of materials of various kinds have been piled up: old bricks and mortar, gravel, hoggin, and what not. We shall not be much surprised if it form a hard, concreted mass, quite unsuited for the end in view. Who superintends it?

British Archæological Association.—At the last meeting, after a number of interesting exhibitions, a paper by Mr. C. Lynam, of Stoke-on-Trent, was read, descriptive of the ancient crosses of Staffordshire, and illustrated by a large collection of drawings and casts. These represented several examples of Saxon date, and the similarity to those of Ireland, Wales, Scotland, and Cornwall, was pointed out. The second paper was by Mr. C. W. Dymond, of Penalt-on-Stanton, Drew; and the chairman (Mr. Cuming) read some notes descriptive of several little-known effigies in the churches of Norfolk, and which are of considerable interest.

CONSTANTINOPLE, AND THE LITTLE WE KNOW OF IT.

THERE is, as all the world knows, now going on and pressing towards some conclusion a series of trials of strength, shall we call them, between what may be termed broadly and generally Eastern and Western ways of work and thinking in this world. In this there is certainly nothing that can be called new, for the elements in it are as old as the world itself; but, nevertheless, the fact of its coming to the front every now and then in so mechanical an age as this is not a little significant, and has hardly, as it seems to us, excited that kind of interest which might, at least in some quarters, have been looked for. We must not generalise too much, that is certain, and must here steadily keep in view the bricks and mortar; but the distinctive difference between the ways of work of the "East" and "West" are so great and broadly marked that a thought or two about them may be of interest. There is no fear of the subject being exhausted, or all the mysteries of it solved in a moment. But if there be many curious interests surrounding the subject, looked at socially, they do not grow less singular when practical, and even fine-art matters are glanced at. We are, perhaps, nowadays a little too apt to imagine that what is being done all about us is quite unique, and that nothing like to it has ever before been even attempted. We are tempted to suppose that the wonderful mechanical power always at command about us does more than all that was ever even tried to be done in other days in places beyond the reach of that wonderful mechanism, and that the "Northern" man,—for that is, perhaps, the most descriptive term,—can do work beyond anything which the "Southern" man ever attempted. The mere existence of railroads, if there be nought else, seems to silence all further talk or argument. But this is but to glance at the matter. We owe to the East, if we but look deeply enough into the mystery, more than can well be told, and must needs go to it to find exemplars of much that is now regarded, as often as not, as quite new, and as hitherto untried and unthought of. Indeed, it must in truth be said that by dint of very closely looking we may get glimpses of things altogether beyond present ken, even in material matters; and hints as to modes of human action, in these days untried, and all but lost.

In the older architectures, for example, there are to be found modes of work, and problems encountered, which no man would now dream of, and a dealing with masses of material which would simply appal our present powers of dealing with them and handling them. There are evidences in the oldest of structures of a power of accurate "fitting" of forms together, and of artistic capabilities in the mere mechanical work of it, which it would be quite vain to look for nowadays anywhere. It is a little-noticed subject, but one well worth attentive looking into. Indeed, might it not be said, broadly and generally, that, while all things about us are mechanically wonderful and noteworthy, past work is equally noteworthy for its evidences of artistic inventiveness, absence of repetition, and power of hand-work?

It is impossible to look at a map of such a city as Constantinople without thought of this distinctive difference between the old-world ways of work, and the new of to-day. A map of London also will do much to show this, and by dint of a little careful colouring of a map of to-day the old ways of town building will separate themselves from those of the past in a very instructive manner. We say with a map of London this may be done, but when we go to a town like Constantinople, where, until lately, all change from the antique ways of work has been ignored, and even steadily resisted, we may see this even more convincingly and clearly, and may well be startled at what may be done, and at the inevitable "progress" of things mundane, but, nevertheless, always at a cost, and with loss of something. The ground on which this ancient city of Constantinople stands would seem to have been intended by nature for its express purpose. A city could not be more happily placed, and there has been no need to contrive the picturesque, for Nature herself has done the work. It is surely a pity that we have but so slight a notion of this famous city, dating as it does from so distant a past. Maps do but little, and we have taken some pains to look into them, such indeed as exist. The most conspicuous thing to be noted in a "modern" plan of this famous city is the vast blank spaces to be seen on it, marked "site of the great fire," of such and such a year. There are three of these vast vacant spaces, and one wonders while looking on them where the unfortunate people are now living who at one time inhabited them, for all is quite recent, and it is frightful to add that these great fires would seem to have been all but purposely caused to "clear the ground," and to compel the new building of the old city in more modern and approved ways. All things are telling against it, and there will soon be probably but little left of the "Oriental" city but the name, and history, and here and there a note of it in modern type! What will be in the place of it it needs no ghost to tell, for it is already commenced.

Constantinople, it may be noted, is comparatively a *modern* city. The antique Byzantium was founded by the navigator Byzas, 656 years B.C. It was afterwards rebuilt and fortified by the Spartan general, Pausanius, but it was Constantine the Great who, to "instruct posterity, and in obedience to the commands of God," laid, as Gibbon tells, the "everlasting foundations" of Constantinople. A better spot for such imperial foundations could not have been found. Nature has at least done her part, and the "architecture" of it, rising to view above its human dwellings, is not unworthy of the site. But the Constantinople, as we now see it, and as it is imagined in pictures, began with the conquest of it by Mahomet the Second, 1453, and it is the *Mahomedan* city that the world is now so curious about, and not the Christian city it before was, for on the Friday following the day of its final capture, its Moslem conqueror witnessed, in the Church of Sta. Sophia, its dedication to the faith of the Prophet of Mecca!

It is this city, as thus transformed or rebuilt, that now so much interests the world, and a pity, indeed, it is that we know really so very little about it. We have not even been able to pick up a tolerably correct *plan* of it, and yet it must be well worth one, accurately laid down, as the streets and ways of it now are, and before that "improvement," which is in the end inevitable, sets in, which will destroy it all, and put a something altogether different in its place. This, as all probably know, has already more than commenced, and the old palace of the Turkish Sultans is gone beyond all recall; and their modern and but too fashionable palace is like any other place of an equally expensive kind anywhere else, and has in reality no artistic or antiquarian interest of any sort in it. While so much has been done for the perpetuation of the forms of the older and Classical "architectures," and modes of building of Greece and Rome, and even of old Troy itself, it does seem a pity that no one has set himself to the work of looking into the art curiosities, and really quite exceptional matters to be found in a place so famous and historic as this. Nothing can well be less satisfactory and less to the true purpose than what is to be got at now, go where you will for it.

We have here, as elsewhere, all the ordinary "guide-book" information and insight into this world-famous city; but surely a something more is needed, and would certainly pay for the cost of getting at. We do not specially allude to the palaces and mosques and public buildings, as the term is, solely; but to the *house-building* and the common street-building.

But leaving the present of this world-famous city, let us for a moment imagine to ourselves, if that be indeed possible, what the character of its individual buildings were, as some here and there may yet be, before it was thought for a moment to "manufacture" or to *restore* the details of them. It is difficult, indeed, for any reader, whatever his leanings, to imagine this. All about us is more or less altered or changed, and is perpetually changing, from its original state; and all modern buildings are the result more or less of a system of joint labour. Let us not be misunderstood. No one man can build up a building as one man can paint a picture; but it is possible for one man to impress his own mind, and even his hand, on a simple house-front, and to thus, in simple fact, make it his own special and individual work. We here leave out of our supposition all ornamental details,—carving, sculpture, and so on,—and confine ourselves to the simple lines and necessities of structural building. The common "house-building" of such a city as Constantinople really amounts to nothing more than this. Each house is a speciality, and a thing by itself. Some idea may be formed of this way of work by study of the little that is left of Middle-Age London house-building,—say, as it is to be seen in and

about the Strand and the adjoining narrow streets. Contrast this with what is seen where *improvement* pulls all down, and builds up its long rows of evenly-built walling, pierced with its regular window-openings and doorways, its roof all but invisible, and with all its smart trimness and baldness. No two things can well be wider apart. It is, in effect, the substitution of mere mechanism and repetition for perpetual variety and newness. Constantinople is now going slowly through this process.

If it be therefore in the very course of things, and its fate that this historic city shall pass away, to be replaced by one built by contract, and which may be imported in bits—bricks ready made, timber in lengths ready cut, and "fittings" already designed for quite other localities—why, it must needs be so! The process, be it observed, has, as it is, already commenced, and it may well go on; and it will at least be in harmony with many other influences now at work in it, which certainly are as utterly foreign to it. The world must needs be content to lose much, if not all, it now professes to value in it,—looking at it of course as a distinct and national expression of that which is peculiar to itself. "Away with it, its builders and keepers," says Mr. Carlyle; "away with them to the Asiatic side of things mundane," and there let them do their work; we may even suppose, in their own way. A yet worse fate might perchance befall them, that is certain. We are thinking of the bricks and mortar, and do not venture further; and would but speculate a little on the altered fate and uses of its public buildings, its mosques, and so on, and even its common dwellings. How long this ancient city of the Turk, and the present masters of it, can hold their own and live in it, may indeed puzzle even acute statesmen and weird philosophers, but the final eventuality of it all surely it needs no ghostly foresight to divine. Will the men or the buildings of Constantinople live the longest? We would here—things being thus dim—ask those who have opportunity to make use of it while there is time, and obtain, on the spot, as many records of Constantinople city as is possible.

ANTIQUE GEMS.

SINCE the dispersion of the Poniatowski collection of engraved gems, two thousand in number, in Paris, no similar event has attracted so much interest as the forthcoming sale, in the same city, of a cabinet supposed to have been furnished and enriched by the late M. Mohl. However, the name of the recent possessor is not, at present, divulged, so that these jewels of fancy will be offered to the connoisseur, free from the adventitious influence of tradition. Still, it is clear that many have the historical Poniatowski stamp upon them, and will be immediately recognised by amateurs, especially by those who detected, or thought they detected, in the course of the famous Parisian competitions, so large a mixture of the spurious with the genuine antique. It will be remembered, perhaps, that the Polish nobleman professed to have amassed no fewer than two thousand specimens of ancient jewel sculpture, if so it may be termed, and even challenged the antiquary to deny that he possessed some of the most recondite illustrations of the art known to cognoscenti anywhere. His successor in the market, whether the executor of M. Mohl or not, is less ambitious, and does not pretend to put up at auction the signet-ring which Judah gave to Tamar, or the seal that left its impress on the door of Daniel's den, or the works of Aholiah and Bezaleel. Yet he does assume that some of the work displayed may claim kindred with the ornaments worn by warriors at the siege of Troy, although, to this kind, Homer makes no reference whatever, in the form of either rings or armlets. Pliny denies their existence; but Plutarch contradicts him. All we know concerning that period is that Polygnotus, the sculptor, placed an engraved ring on the finger of his statue of Ulysses. One point, moreover, is plain,—that the extraordinary antiquity asserted for these gems is a thing not impossible, or even improbable, in itself. Materials like onyx, carnelian, emerald, jade, or amethyst, are practically imperishable, or, at any rate, centuries do not wear them out, and the engraving, whether in intaglio or relievo, is likely to last almost as long as the stone. The wonder is how, assuming only a moderate degree of antiquity for those gems reputed to be the oldest, the workmen found their tools and apparatus,—iron converted into steel of the hardest quality; chisels, of the minutest edge and point; lenses, diamond-powder, and something, at all events, approaching the principle of the lathe, though this, the lapidary says, never matches the perfection of pure handwork. But the evidence of antiquity is to be found less in the craftsmanship than in the subjects illustrated. It was rarely, for instance, that the artist applied himself to the past; he took note of contemporary interests, and wrought from living ideas. The modern collections, however,—and particularly that which is about to be scattered at Paris,—boast of few examples dating from earlier than the Middle Ages, if so they may be termed of Paganism. There is an Ethiop ring, we are told, venerable as a mummy, with Egyptian gems identical in character with the inscriptions on the coffins at Dendera. In fact, it is here that the collection begins to assume an archæological character, and to emerge from conjectural mists. Engraved shells or stones, worn as amulets or personal decorations, become frequent; and relievi on agate exhibit a very pure and ingenious workmanship. The rough catalogue which alone we have had an opportunity of consulting, does not, however, attempt to classify either styles or epoch, though it was quite unlikely that the collector himself was so careless. Our only guide is the progression from a rude disrespect of all shades and colours, rigid outlines, and, as it were, an Etruscan treatment of forms and tints to the florid taste succeeding them, the substitution of cameo for intaglio, and the employment of rare stones difficult to operate upon as the artists' materials. We do not observe, however, that either Prince Poniatowski, or the Parisian virtuoso who inherited his mantle, troubled himself much with the Phœnician die-sinkers or the Dædalian gems; they appear to have been satisfied with starting from ascertained dates in the chronicles of Etruscan, Greek, and Roman art, without even summoning the mythical ring of Polycrates served up to that monarch in the belly of a fish. They knew and regretted that the Julian and Palatine collections were irretrievably lost, or that, if not, the last chance remaining is, that a fragment or so may be recovered from amid the rubbish of time; though even this possibility is clouded by the fact, that every catalogue known to have been once compiled has perished. Still, the testimony assumes an historical shape from this point downwards, and Prince Poniatowski even believed that he possessed the original portrait, in emerald intagilio, which was presented to Lucullus by the Emperor Ptolemy. Thence, however, the light breaks in bright refractions upon these treasures, and we find Aspasia herself at work upon many a gem and cameo, until we come down to later times, with all their classic corruptions. The French cabinet, like the Polish, represents every stone, from the agate to the ruby,—the diamond alone excepted, for the diamond has never been engraved, and is considered impossible to engrave, though it has been used in the engraving of other gems. Agates are to be met with, cut in relief or intaglio, in all miscellaneous collections, with onyx, carnelian, amethyst, and emerald; after which inferior pebbles were used, so general was the desire for these ornaments. Inferior works, indeed, were valued when no others, superior to them, were known; but, as the art progressed, the earlier productions were no longer preserved. It is evident that the earliest would be representations of single and simple subjects, and we must never expect to find a very early engraved gem of an elaborate or complicated composition; yet this does not apply to the workmanship. The genuine Greek gem is either deeply and elaborately, yet freely, cut, or slightly, as if to constitute a master's sketch, and it is invariably hand-work, assisted, of course, by tools. The lathe, as now in use, was a modern innovation entirely. But then Greek artists had their copyists and plagiarists by scores—in Rome and Florence principally — who imitated their styles, and forged their names without scruple; so that without authenticated catalogues and signatures it is difficult to draw a distinction. The Alexandrian heads and vestal virgins attributed to the first century were often, in reality, the work of the seventeenth. Prince Poniatowski was often misled in these respects, but we are assured that the Parisian collection now about to attract the connoisseurs of Europe is infinitely more eclectic. It is smaller, of course, and therefore less likely to be adulterated as by a collector who was proud rather of the number than the purity of his gems; but the chief interest of the coming rivalry among connoisseurs and dealers will consist in the light it may throw upon the existing taste of Europe with reference to a long-neglected art.

JARROW.

ALONE among the new towns of the North, Jarrow may lay claim to a name which holds a place that is classic in history. Middlesbrough has some title to olden repute, but it is associated only with the name of a cell given to Guisborough; Hartlepool, for its trading eminence in the past, has some claim to remembrance; but to Jarrow there is due the credit of being the centre of the sole light that throws its rays upon one of the darkest periods of our national history. Its time-worn abbey, looking down on the mirky marsh called Jarrow Slake, enshrines the name of the venerable Bede, who there lived, preached, wrote his ecclesiastical history, and died, leaving that which has made historic the now dingy monastery. Jarrow never fairly lost its claim to fame; for, in the early days of the Durham coal trade, coal was shipped there and at Hebburn, close at hand; and in the earlier part of this century, its sail-cloth factory and its shipbuilding yard, with its coal-trade, gave it some right to rank amidst the industrial oases that then only dotted the green banks of the river Tyne. The population of its township, however, increased very slowly: it was 1,566 in 1801; it had grown to 3,193 in 1811; and again to 3,530 in 1821, but in 1831 it was only 3,598; and this seems to have been the limit of its growth up to the date of the new departure in the shipbuilding trade, and of the growth which has been witnessed in the last two score years in the coal-trade of the Durham and Northumberland district. Jarrow was only a small village when Mr. C. M. Palmer commenced business as a shipbuilder there. He had been a coke manufacturer, became a coal-merchant, and, finding that the north-country coal was in danger of being eclipsed by the facility with which the midland coal district could send its produce by rail to London, whilst the north-country coal was delayed weeks at sea by unfavourable winds, he set himself to solve the problem, and built the first collier-steamer,—a vessel which proved the practicability of the experiment to send coal quickly to the London market. It was accomplished in the face of great prejudice by men engaged in the shipping and coal trades, who argued that it would be impossible for a vessel costing 10,000*l.*, and carrying between 600 and 700 tons of coal, to compete with vessels costing perhaps 1,000*l.*, and carrying only 200 or 300 tons of coal, but using no fuel. The first few months' work of the vessel built by Mr. Palmer proved its success, and caused what has been with reason called a revolution in the coal trade. Gradually from their Jarrow yard, Messrs. Palmer built vessels of increasing note, including the *Terror*, the first war vessel built in the Northern district, —the first vessel armoured with rolled plates instead of forged plates. As times went on, the great shipyard at Jarrow added other branches to its operations. Four blast-furnaces were built, rolling-mills were added, and a lease of royalties of ironstone was acquired at some little distance on the coast. When practical completion was given to the idea of the founder of the works, they included all that was necessary to turn the raw ironstone into vessels. At the ironstone mines a small harbour had been formed, from which the steamers ran to convey the ironstone to Jarrow from the mines. Delivered there by hydraulic cranes, it was passed on to the blast-furnaces, smelted into pig iron, then passed to the rolling-mills, and transformed into plates for use in the ship or boiler yards. Yearly there are drawn from these mines the ironstone to make over 7,000 tons of crude iron monthly. The ships built in the yard have averaged a tonnage of 12,000 yearly, and have on one occasion reached in a year the sum of 22,000 tons. Half a million tons of coal and coke are yearly used; 2,000,000 ft. of gas are consumed every month in periods of normal prosperity; whilst the number of workmen employed by the company who are Mr. Palmer's successors has amounted to 10,000.

As Jarrow is the centre of this trade it was inevitable that it should be largely influenced by the growth of this vast industry in and near it. The 4,000 people who populated it two dozen years ago, when the Messrs. Palmer commenced their establishment with something like 150 workmen, grew, by 1861, to 6,404 only; but

before a decade had passed after that census the number had been nearly trebled, for the number was, in 1871, tabulated as 18,099, and since then a further growth has given bases for the estimate that its present population is about 25,000. Similarly, the rateable value of the town has risen. It was, in 1851, little more than 4,000*l.*; it increased to 9,400*l.* by the year 1861. In another ten years it had risen to 47,656*l.*; in two years more to 52,000*l.*, and now it may be stated at fully 60,000*l.*, of which the works of the company, which are its chief support, contribute a sixth; and although at a less rapid rate, it has acquired the usual institutions and adjuncts of towns, completing the list of its local governing bodies by acquiring, rather more than a year ago, the dignity of incorporation, and thus distancing in the race to this goal of self-government the more extensive town of West Hartlepool, which has made many abortive attempts to acquire a mayoralty. The Tyneside town has now some 4,000 ratepayers; its streets are about eighteen miles in length; its sewers close upon a dozen miles. Its houses number some 4,000, its schools are two dozen in number, and it incloses a dozen places of worship. Unlike most of the other new towns of the north, Jarrow depends almost solely upon the works of one vast company, and, unlike most of them, it is neither begot by coal nor iron. It is the only town in the northern district which may be said to have been built up by iron shipbuilding, and by the auxiliary industries thereto; but like most of the towns which have grown into greatness in the north in the memory of this generation its foundations seem firmly based. There are relics of Bede still preserved, it is said, in the old church, but there are as enduring mementoes of the present claim to remembrance of Jarrow, not alone in the fact that it is associated with the development of a new industry, and with the creation of some of the most mighty amongst our men of war, but also because of the extent to which the merchant navy has been increased by the efforts of the Jarrow yards.

Seen from almost any point, the Tyneside town can scarcely be said to be æsthetically perfect. From the higher ground it is seen dimly struggling through a pall of smoke, its streets straggling raggedly along, its works stretching down to the river, and blast-furnaces near thereto raising their grimy heads. From the Tyne may be seen the barren reaches of its slake, the launching berths of its shipyards, with skeleton-looking frames of vessels thereon, and the vast works that abut on the edge. The air around may be laden with fumes, the clang of the hammers of riveters is the rough music heard in passing, but both bespeak the extent of the industrial operations which give support to the large population that has gathered near. And whilst in the past score of years the progress of Jarrow has been great, its progress in the future will be probably in a ratio of increased rapidity, for yearly its repute as a site for shipbuilding, and the fame of the vessels it has constructed, are extending; and whilst its primal trades thus promise to prosper, others on a large scale are firmly fixing their roots.

THE MANUFACTURE OF PAPER PULP FROM WOOD.

Two different, but both very important, products used in the manufacture of paper are prepared from wood. One is the so-called mechanical wood pulp, obtained by grinding, which, on account of its brittleness and other properties, cannot be considered a substitute for rags, especially for medium and fine papers; the other product being a cellular pulp, called wood cellulose, prepared by the action of chemical agents upon the wood. The denudation of the wood cell meets with greater mechanical difficulties than is experienced in laying bare the straw cell, because wood is of closer grain, and its incrustated substances are, besides, more difficult of solution than those of straw. Wood, however, being richer in fibrine, and being generally cheaper and more easy of transport than straw, and the wood cell further yielding a paper pulp of extraordinary firmness, from which the most beautiful paper may be made, the manufacture of useful cellulose has for a long time been considered of the greatest industrial importance.

The process pursued for many years in preparing paper-pulp from parts of plants rich in fibres, and called the fermenting process, but which, on account of the intermixture of substances very difficult of separation from the wood, cannot be applied in its original mode of procedure, may be considered the fundamental principle of the manufacture of cellulose.

The large paper-mill and wood-pulp manufacturing company of Jesop & Moore, at Manayunk, near Philadelphia, after a lengthened course of experiments, established in 1865 a wood cellulose factory, for the manufacture of the stuff on a large scale for practical purposes, imitating the process pursued by C. Watt & H. Burgess.

Although, in consequence of defective machinery and apparatus, the quality of the pulp produced did not come up to the expected standard, besides the cost of manufacture proving too high, the spell was broken by the erection of the manufactory; and three years later, in 1868, the Gloucestershire Paper Company, Cone Mills, Lydney, established a large cellulose factory and paper-mill combined. Profiting by the experience of the Americans, and introducing improved apparatus and machinery, they made papers, without any addition of rags, of the cellulose manufactured by themselves, thus showing that cellulose may be profitably manufactured on a large scale; that the cellulose produced may be made into medium papers without the addition of rags; and, finally, that the manufacture of paper of wood cellulose offers advantages compared with the use of rags.

The striking results of the Cone Mill Company having attracted the serious attention of industrial circles, in 1871 an association of English and Swedish capitalists established in Sweden five large wood cellulose factories. There are now, besides different American and English manufactories, five factories of wood cellulose in Sweden and six in Germany in existence, which sell the raw product to paper-mills. Those in Sweden have been in full working order since 1871, the German ones since 1872; while other methods have either not yet gone beyond the range of experiment, or have been rejected as impracticable.

The best woods for manufacture into cellulose are supplied by coniferous trees, *i.e.*, firs and pines; and they may be used either in the shape of whole trees, logs, or chips. Leaf-bearing trees supply a short-fibred, little-durable pulp; oak is absolutely useless. Cellulose may also be made of coarse saw-dust of coniferous trees, but in this form can only be used for inferior papers. The process of manufacture of wood cellulose is described as follows.

The wood, after being freed from bark (boring of the knots is not considered necessary), is cut in a cutting-machine into pieces of about 0·8 in. long, 0·4 in. broad, and 0·2 in. to 0·3 in. thick. The machine consists of a horizontal shaft driven direct by a horizontal steam-engine, at one end of which is an oscillating plate provided with a knife. The tree is pressed endways against this plate, and at each of the latter's revolutions a disk is broken off in splinters of the size of the diameter of the tree, and of a thickness of 0·8 in. The splinters drop between two fluted cylinders, are torn by them, and reduced to pieces of the dimensions above mentioned.

It being essential for the production of well-boiled pulp that the pieces of wood should be of equal size, the wood, on coming out of the cutting-machine, is passed through a refiner (an apparatus resembling a coffee-mill on a large scale), by which the pieces are again reduced, and made as uniform in size as possible.

The cut wood is put into perforated vessels of tin plate, and in these removed to a horizontal boiler. The boiler, being completely filled with wood, is screwed down, pumped full of caustic soda, and the boiling process begins by direct firing. When the liquid in the boiler, after three or four hours' firing, has attained a temperature corresponding to a pressure of about ten atmospheres, the boiling process is concluded, and the boiler is, after cooling, emptied of liquid and wood. The latter is unwashed and unbleached wood cellulose. This is then washed in a washing apparatus, bleached in a bleaching apparatus, perfectly dried in a pulp-drying machine, and finally cut by a cutting-machine into sizes suitable for transport.

If the pulp is only drained, *i.e.*, sold in a state containing from 60 to 70 per cent. of water, drying and cutting apparatus are dispensed with. In the former case, the pulp is sold in commerce in sheets like pasteboard; in the latter, in lumps, in barrels. The lye run off the boiler, after the boiling process is concluded, is boiled down in the usual manner, and converted again into natron.

A cellulose manufactory producing about 20 tons of wood pulp per week must be provided with the following machines and apparatus:—One wood-cutting machine; one refining machine or refiner; two boiling apparatus, with fittings; three washing and two bleaching apparatus; four lixiviating apparatus; one pulp-drying machine, with fittings; all the reservoirs, as well as the iron implements for extracting the lye from the boiler; all the reservoirs and implements for obtaining the caustic soda; the mixing-vat; and, finally, engines of about 88-horse power distributed over three motors. A weekly production of 10 tons of pulp does not pay, on account of only partial utilisation of heat; such a manufactory would only work with one boiling apparatus, while that described contains two.

Cellulose has now been used in the manufacture of paper for several years past, and especially on account of its tenacity, for the better descriptions of paper. In its unbleached state it takes the place of rags for common foolscap paper; bleached, it serves as a substitute for white linen rags. There being at present only a comparatively small number of cellulose factories in existence in Europe, a more extensive use of the material for the manufacture of wheel-tires, barrels, as a substitute for felt soles, or for piston-rings, such as has taken place in America, has hitherto not been possible. A patent was taken out in 1870 by Mr. Richard Smith, of Shelbrooke (Canada) for the manufacture of boxes, &c., direct from wood pulp. Lately, barrels have been made in America from pulp in its soft state. The wood pulp is pressed into sheets, and several layers of these are bent into a cylindrical shape, the two ends being joined by a ledge of wood nailed on them. Head and bottom are made of wood. Another method, for which a patent has been taken out, is to make barrels direct from the pulp, by laying it round an expansible cylindrical core to the thickness required, when, after withdrawing the cylinder, the barrel is put between rollers to be pressed into the desired form. Several analogous methods have been patented, but we are not aware whether, up to the present time, they have been put to a practical use.

The present minimum price on the Continent of air-dried cellulose is, in its unbleached state, 22s. 6d., and bleached 31s. 6d. per cwt. on the spot. At those prices, the use of cellulose in the manufacture of paper, according to the statements of a well-known German papermaker, yields an extra net profit of at least 6s. per cwt. of finished paper, in comparison with the use of rags.

In its drained-off state, *i.e.*, containing about 60 to 70 per cent. of water, wood cellulose, because of the cost of freight, can only be profitably manufactured if there are certain consumers at distances not too far from the place of manufacture; if dried, however, it may be sent any distance, and is not dependent for consumption within a confined area.

Places lying near water, and with means of transport for coals, soda, lime, and wood, are especially suited for the manufacture of cellulose; the neighbourhood of paper-mills is not essential, if the stuff is dried. The quantity of water required, which should be clear, but need not be chemically pure, amounts in average-sized works to about 450 gallons per minute. A cellulose factory may be driven either by steam or water power.

Supposing the production of a cellulose factory to be about 20 tons of wood pulp per week, a calculation as to its remunerativeness will supply the following results. For the production of 1 cwt. of dried cellulose are required about 4 cwt. of wood, 28 lb. of caustic soda, and about 3½ cwt. of coal; of course, turf, wood, or brown-coal may also be used as firing material. The production per week above mentioned requires about 55 to 65 workmen, as well as about 5 tons of lime. It is estimated that, reckoning 1 cwt. of air-dried wood at 1s., the workman at 2s. per day of 10 hours, and the other materials at the highest market prices of the day, the manufacture of 1 cwt. of dried cellulose, after deducting all expenses, would give a net yield of about 6s., corresponding to about 25 per cent. of the capital invested. If a manufactory owns forests, chemicals and coals being available in the immediate neighbourhood, and if latest improvements for saving coals and soda are introduced, the net yield would be raised considerably. At the minimum price above stated, of

22s. 6d. per cwt. of dry cellulose, the cubic foot of wood is reckoned at 1s.

The principal markets for cellulose, as far as it is exclusively used in the manufacture of paper, are Germany and Austria; in England the better descriptions of paper are still realising such good prices that manufacturers can afford to use rags at their present exorbitant prices. No data are to hand with regard to Russia.

The advantages which will accrue to industry in general, and to the timber trade especially, from the introduction of cellulose manufacture, as well as the experiences gained by the introduction of this new branch of industry, may be shortly summarised as follows. Cellulose permits the paper manufacturer to make certain descriptions of paper cheaper than he could possibly produce them if made of rags, and the new material has consequently for this branch of industry alone a very important future before it. But there is no doubt that in time, by its means, new industrial branches will be opened up, and, on the other hand, old industries will be guided into new channels.

The manufacture of inner soles, for instance, of cellulose instead of felt, as well as the production of piston rings of the same material, instead of caoutchouc, &c., have been introduced in Germany already, notwithstanding the shortness of time since cellulose has been made; thus proving its importance for industry.

The advantages resulting to the timber trade from the introduction of cellulose will not be few. It is certain to increase the demand for timber, but there will also be a greater inquiry on the spot, and at a good price, for certain descriptions of wood, and all kinds of chips—hitherto almost valueless to owners of forests and saw-mills, and not fit even for transport to a paying market—which will now be used in the manufacture of wood cellulose. The gain will be still greater where small wood and partly rotten wood, which cannot be utilised for manufacture into cellulose, can be used as firing material, which latter, if it consists of coals, is reckoned at 1s. per cwt., and which represents considerable quantities.

The establishment of cellulose manufactories cannot be recommended to owners of paper-mills for several reasons. Cellulose factories, as has been pointed out, require peculiar local conditions; they cannot be worked profitably on a small scale; they cannot be well worked in connexion with paper-mills; and, finally, in most cases, paper-makers have invested such a large capital in their mills that further means for constructing additional and larger buildings are not always at disposal. For these reasons, it seems probable that the manufacture of wood cellulose will develop itself into an independent branch of industry, and that a class of the public, consisting, for the most part, of large capitalists, but especially owners of extensive forests, will principally be interested in its development and prosperity.—(Further particulars will be found in the *Handelsblatt für Walderzeugnisse.*)

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

AT the ordinary general meeting of this Institute, held on Monday evening last at Conduit-street, Mr. Charles Barry, president, in the chair, the following gentlemen were balloted for and duly elected, viz.:—As Fellows: Messrs. Isaac Holden, John Holden, James Murgatroyd, Francis Haslam Oldham (all of Manchester), Walter Lyon (of Lincoln's-inn-fields), and Ernest Turner (of Bedford-row). As Associate, Mr. Otho Bathurst Peter, of Haverstock-hill.

The President called the attention of the members to the proposed collection of drawings illustrating ancient buildings recently restored. A circular was issued in July last inviting members to contribute to the collection, but the appeal thus made had up to the present time elicited but a small response. A suggestion on the point made by Mr. G. H. Birch in his paper on Old London, and the donation of prints and drawings which Mr. J. W. Hugall had given to form the nucleus of such a collection, made the present an opportune moment to solicit the help of all the members. Such a collection would be invaluable for purposes of reference.

A number of books and photographs were presented, including a good view (given by Mr. Ferrey) of St. Werburgh's tower, Bristol, which, as recently recorded in the *Builder*, has been doomed to destruction to meet the supposed exigencies of the traffic. In reference to the matter,

Mr. Eastlake said that the Council had memorialised the Mayor and Corporation of Bristol against the destruction of this fine tower, but with no result so far except getting an intimation that the memorial had been received.

Mr. C. F. Hayward said it would be a great disgrace to Bristol if the tower were destroyed, because there was no real necessity for its demolition. True, it slightly projected into the street, and was to that extent inconvenient, but it was possible, by an alternative plan, to retain the tower without suffering any inconvenience from its retention. It was bad enough to destroy the church, but it was mere wantonness to demolish the tower. Notwithstanding all remonstrances, however, the Municipality seemed quite determined in its purpose.

Mr. Dawson said he was well acquainted with the street in which the tower was situate, and from the nature of the improvements now imperatively required to accommodate the traffic, he did not see how the tower could possibly be retained. The site of the tower was not required for the widening of the roadway, but for the formation of a footway, the roadway having been already widened by taking in the footway next the tower. Although it would seem to have been necessary to demolish the church, he should have liked to see the tower remain *in situ*, or, failing that, it might have been carefully taken down and rebuilt, stone by stone, as an adjunct to some new church in the suburbs.

The President.—Unless the Americans could roll it back for us.

Mr. Blashill said that some years ago Sir Gilbert Scott had solved what appeared to be a precisely similar difficulty at St. Mary's, Hull. The tower of St. Mary's projected to an inconvenient degree on to the footpath of the street, but Sir Gilbert had caused the people using the footpath to pass under the tower. Possibly what had been done in the one case was equally practicable in the other.

Sir Gilbert Scott said that in the case of St. Mary's, Hull, the tower stood directly across where it was desired that the footway should come. To get over the difficulty, he adopted a very simple expedient, similar to that seen at the church of St. Magnus, London Bridge. He merely opened the arches on the north and south sides, and the people passed right through the tower.

After some further discussion, Sir Gilbert Scott undertook to write to the municipal authorities at Bristol, calling attention to the fact that, by the expedient referred to, it was possible to retain the tower without inconvenience to the street traffic.

Mr. I'Anson said that, although suffering from a severe cold, he had come to the meeting expressly on account of a letter which appeared in the *Times* on Thursday, the 4th inst., signed "A London Parson." Owing to absence from town he did not see the *Times* for the next two or three days, and did not know what had been done, not having had the opportunity of seeing the excellent letters which had since appeared. The only letters which he had seen were those which had appeared in that day's (Monday's) *Times*, and he could only say that the letter which the President of the Institute had written expressed in the best manner possible the feelings of the Institute. He could say that in his now very long practice,—a practice which had peculiarly brought him into the company of a very great number of architects,—he had never met with one whom he could for a moment suspect of any such improper conduct as that attributed to members of the profession by the writer of the letter; nor did he believe that any member of the Institute could so far forget the traditions of what had always been an honourable profession. He was sure that these were the unanimous and honest feelings of every member of the Institute.

The President said that he did not doubt for a single moment when he was writing his letter that he was speaking in the name of every member of the Institute, and that what he wrote would be endorsed by all. A communication had just reached the Council stating that the President of the Architectural Association had also addressed a letter to the *Times* informing the public and the "London Parson" that the Association looks up to the Institute in all its rules for maintaining the integrity and honour of the profession.

Mr. Boyes (president of the Architectural Association) said his reason for writing was that in the letter published by Sir Edmund Beckett the Institute was spoken of as "one of the architectural societies," and the letter seemed to imply that the matter had only been taken up by one of the professional societies, utterly ignoring the fact that what the Institute did in a matter of that kind it did in the name of all the architectural societies.

The matter then dropped.

Mr. Cockerell said he had just received intelligence of the death of one of the honorary and corresponding members of the Institute, M. Henri Revoil, of Nîsmes.

The President said that some time ago it was represented to the Council that some restorations were going on at New Shoreham Church, and it was rumoured, with no sufficient foundation, that the ancient character of the building was not being duly cared for by the architect employed. The Council at the same time accepted the kind offer of Mr. Edmund Sharpe to go and look at the work of restoration in progress. No one more competent for such a work than Mr. Sharpe could have been fixed upon for its performance. Mr. Sharpe had just sent in a report of his visit, fully exonerating the architect in charge of the work from any kind of neglect, carelessness, or ignorance in carrying out the work. Mr. Sharpe said:—"I paid a visit to New Shoreham Church on Saturday, the 9th inst. [December], and carefully examined it, and I am happy to be able to report very favourably of the works which have been done." Mr. Sharpe then went into details to show the character of the work. "As regards the particular example in question, he" (the architect) "has had the courage to leave such portions of the ornamentation as were more or less damaged in their original condition. His conservative treatment of this remarkable church will have earned him the thanks of all." *

Mr. John Lanyon then read a paper "On some Sanitary and Practical Appliances calculated to increase the Comfort of Dwellings," including descriptions of recently-patented inventions in regard to ventilation, improved closets, slop-sinks, kitchen-ranges, and other household arrangements. Mr. Lanyon's paper was illustrated by diagrams and models of his inventions, without which anything like a detailed report would be unintelligible. Mr. Lanyon commenced by referring to the ravages of sewer gas, and pointed out how appliances intended to keep it out of the house sometimes had the contrary effect. In his appliances for ventilation, Mr. Lanyon has aimed at getting rid of surface gases, it being his experience that extracting-flues in the ceiling are not sufficient for the purpose. To carry off the smells evolved during culinary operations, he provides a system of upcast and down-cast shafts, and in a similar manner he disposes of smells in water-closets.

In the discussion which followed,

Mr. Fogerty criticised the details of some of Mr. Lanyon's appliances as complicated and likely to get out of order. As to smells in water-closets, he thought that chemicals afforded a better means of getting rid of them than appliances which were not thoroughly reliable in action.

Mr. Turner, Mr. Dawson, Mr. Seddon, and Mr. C. F. Hayward also took part in the discussion, at the close of which a vote of thanks was given to the author of the paper, Mr. Lanyon, who replied to some of the objections raised against his appliances.

The meeting then terminated. The next meeting will be held on Monday, the 18th inst., when Mr. Fergusson will read a paper "On the Temple of Diana at Ephesus, and the Hypæthron of the Greeks." The president, in making this announcement, said that Mr. Fergusson was of opinion that recent excavations had cleared up some doubts which had long existed as to the arrangement of tetrastyle temples.

Government Fund of £4,000 for the Promotion of Scientific Research.—The President and Council of the Royal Society have resolved to advise the Committee of Council on Education to expend the above-named fund in aiding scientific research:—1, by conferring grants on competent persons, or by offering prizes of considerable value for the solution of problems; 2, by meeting applications from persons desirous of undertaking investigations; 3, by applying funds for computation, the formation of tables of constants, and other laborious and unremunerative scientific work.

* We have since received from the secretary a copy of Mr. Sharpe's report, but do not find it necessary to print it.

HEALTH IMPROVEMENTS IN GREAT CITIES.

Dr. B. W. Richardson, F.R.S., on Monday evening last delivered the first of two lectures on this subject, at the London Institution, Finsbury-circus. He observed that, for purposes of health, the houses on this island require to be rebuilt or remodelled from Land's End to the Hebrides. He admitted that there is about some of them a certain element of beauty, but he had not been able to discover one house in the island constructed on a plan perfect for the requirements of the healthy existence of its inmates. Pure air, pure water, purity from damp, pure daylight, equable temperature,—these, said Dr. Richardson, are the five fingers of the right hand of health. They are little known; but the knowledge exceeds the practice of them. The lecturer then entered upon a review of the difficulties which lie in the way of reform, difficulties closely connected with the social as well as with the physical development of man. He said that the progressive development of practical learning in the building of houses of towns had been much modified and delayed by political causes. But political circumstances in England had now become very favourable to improvement. The house for occupation is often also the house of trade. Men, women, and children sleep in conditions of dust and close atmosphere which are unfit for the continuance of a wholesome existence. The odour of the shop pervades every nook and corner, and when the business is of an offensive kind the atmosphere is devitalised. The factory system has massed people together in crowded streets, and in new houses lacking the first principles of sanitary science, where bedrooms are ventilated from kitchens, living-rooms from cellars, in which ventilation can only be carried on by open doors, and a door cannot be opened without draught or dust. The houses of the upper, middle, and professional and independent classes often concentrate the errors of all the rest and of all the past. A part of the house is below the soil, like the dungeon of a castle. The grand staircases bring the atmosphere of the vaults to the living-rooms, that of the living-rooms to the bedrooms, and the whole into a close vault above, which, like the bell-jar of the chemist, catches the gases made in the day, that the occupier may have the privilege of going to sleep in them in the night, and may revel in them unconsciously for a third of his life. The lecturer observed that in a late discourse he attempted to describe a model city, in which, however, nothing was out of the range of human science and skill. While the combination remained unproved and waiting for a gradual development, there was no reason why the details should not at once be considered, with a view to their practical application. It would answer the purpose best to take a dwelling-house of one of the middle-class, and to leave out of sight the half-filled mansions of the great, or those of the poor, which will hardly be changed till the higher class have set the example of improvement. He would propose a very simple model house for the metropolis, such a one as he would if he could build for himself. He would commence the reformation from the basement. The basement saps the health of the occupants of the house more than any other deteriorating influence. The basement walls and rooms are, however clean, always at fault on the score of dampness. They are surrounded by damp earth; into them all the rain which falls near the house splutters down. The pipes which convey the water from the roof and closets find at the basement their easiest points of leakage. Kettles, pots, and all vessels containing fluids here boil and cool. Their vapour is given forth and condensed. Clothes are here put to the fire, crockery set up to dry, sinks are deluged and scrubbed. All this wet passes by evaporation, with the help of a great fire, to the upper part of the house. At night the condensation ensues. In the morning the dripping walls are re-heated and the process goes on again. A lady he attended in the west of London suffered from neuralgic pains. He put his hand on the balustrade as he descended the stairs and found it covered with moisture. He told his patient that the builder was here wanted more than the doctor. A great authority was of opinion that malaria, fever, and ague were sufficiently accounted for by dampness. No doubt colds, exhaustion, toothache, &c., are either caused or aggravated by living above wet basements with fires in them to draw up the water, so that the occupant of the house is in a worse position than if he lived in a city raised on piles above a lake. The food in the damp air is rapidly decomposed; its particles carry infection through the house. The basement in good houses is also often made the sleeping-place of women and children. Philanthropists sleep night after night over these catacombs. He had seen a house where sixteen servants slept in underground beds, who could never at any season of the year see to dress without artificial light. The barons of the Middle Ages took the precaution to cut off from all communication with themselves those who passed their lives in their dungeons. Now the basement properly should be an arched subway with a free current of air through. It should no longer be a living place, a cooking-place, a laundry, a bottle-vault, refuse store, larder, servants' bedroom, drain-trap, and lavatory. It would consist of three arches, each of which through flue-openings would communicate with the air. One of the arches would lead to the staircase at the back of the house to form the servants' entrance. In the basement would be placed the closed bin for receiving, by an outer shaft, all the refuse of the house. In the basement would be a closed tumbling bay, in which the soil-pipe would discharge. Through the basement the water-pipe for the supply of the houses and the gas-pipe would enter, and two at least of the arches might be fitted up with good furnaces or stoves, into which air derived from the upper part of the arch might be drawn and heated, purified, and passed into the upper part of the house. Nicely fitted, the basement rooms might be turned into hot-air rooms, like the Roman baths, or to other useful purposes. But about the basement part there would always be this provision, that it could never be entered by a direct shaft communicating and forming a distinctive connexion with the rooms of the house above. The next change would be in the staircase. This change is not easy in houses as at present constructed; but in new houses it should never be omitted. In the present construction the staircase is the shaft of the dwelling through which all the products of respiration, combustion, and other forms of volatile impurity rise from the lower to the upper floors. It holds an open communication with all parts, and while it allows for the diffusion of every volatile impurity and damp, it prevents all possibility of maintaining through the house an equitable and agreeable temperature. It is the great source of draughts, and it lessens the size and comfort of every floor. It enforces that all the water-closets shall be included actually in the living part of every dwelling—one of the most unwholesome and objectionable of all modern arrangements. The staircase should be placed in the rear of the house in a distinct shaft or tower of its own, leading straight from the ground-floor to the upper part above the level of the house. At each floor there should be a door, and each flat would be independently lighted, warmed, and ventilated. Through the shaft the ventilating tubes could be carried, a lift, closets, and lavatories would be in the shaft. All that should be out of the house would be in this shaft. In the third floor should be the kitchen and servants' dormitories. From a spare boiler in the kitchen hot water should pass into any floor. The kitchen would have its own sink, opening into the dust-shaft. The cock-loft above,—so called because it is the crown or cap of the house,—is now misapplied and misconstructed. Here is a pointed roof, beneath which one is roasted in the summer and frozen to death (there is actual experience of this fate) in winter. Here, upon a firm, almost level, asphalted roof, Dr. Richardson would raise a garden covered with brick and glass. Into this the stair-shaft would finally enter, and if any impurities reached this covered garden with its summer temperature always derived from the kitchen just beneath, the impurities would be eaten by the plants. Here the children and other inmates of the house would play and find relief from the monotonous contemplation of one or two rooms of limited size.

Ball in Aid of the Builders' Benevolent Institution.—This annual gathering, whereby people can do good by enjoying themselves, is fixed to take place on Thursday next, the 18th inst., at Willis's Rooms, St. James's. There is a good list of stewards, and everything promises that the ball will be as agreeable and as profitable as its predecessors. We cordially hope so. Mr. F. W. Keeble acts as hon. secretary.

BYE COMMISSIONS.

The correspondence on this subject is still continued in the daily papers, and several well-known architects have given in the *Times* the same general denial which we gave in our last. We print a letter on the subject from the President of the Institute, although, since it reached us, it has appeared elsewhere. The following statement from a barrister is worth the attention of any individual member of the profession who may think himself justified in taking a commission from tradesmen employed under him, should such there be!

The judgment of the Court of Queen's Bench (Cockburn, Chief Justice; Blackburn and Archibald, Justices) in the case of "Harrison *v.* Thompson" (L.R., Q.B., vol. ix.) should be studied by all persons who in any capacity are intrusted with the duty of acting for others in business transactions. It is clear from this judgment that our Courts never waver from that original, fundamental, and well-established principle of the law of agency, viz.:—That no agent can make any profit out of his agency without accounting for the same to his principal, to whom alone he must look for payment for his services.

Lord Chief Justice Cockburn says in that judgment, "the profits acquired by the servant or agent in the course of or in connexion with his service or agency belong to the master or principal." And, quoting from equity cases the Chief Justice says:—"The cases in equity are to the same effect,—viz., that the profits directly or indirectly made in the course of or in connexion with his employment by a servant or agent without the sanction of the master or principal belong absolutely to the master or principal." Moreover, the Chief Justice quotes with approval passages to the same effect from Story and Paley on Agency.

Upon these principles the Court decided that the defendant, as agent, was bound to pay over to the plaintiff as his employer every farthing of the commission he had received, which the Court held was the "property of the employer."

COMMISSIONS TO ARCHITECTS.

Sir,—I have not seen the *Times* of the 4th, or the letter it appears to have contained from "A London Parson" alleging his *belief* that architects are usually in the habit of receiving fees or commissions from the tradesmen employed on works under their superintendence, as well as the usual commission of five per cent. from their employers, and which allegation, I see, has most naturally brought forth the indignant denials contained in the *Times* of the 5th from Professor Donaldson, Mr. Street, and my brother, Mr. E. M. Barry. As president of the Royal Institute of British Architects I cannot remain silent, and must ask your insertion of these few lines.

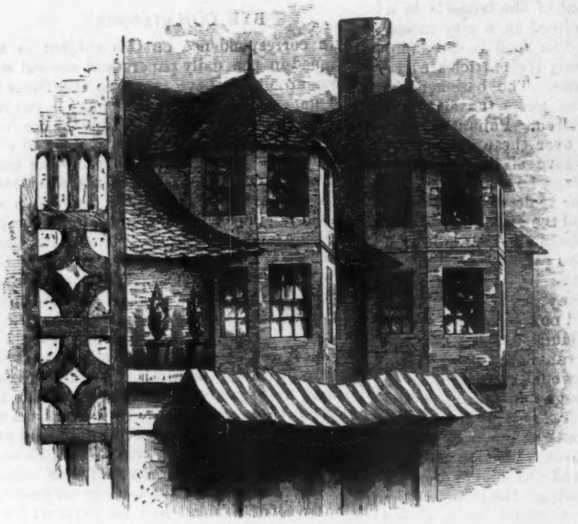
A "London Parson" seems to need to be told that members of other professions besides his own have at least as high a sense of honour and integrity in their dealings with their fellow-men, and that as he no doubt would indignantly repudiate a charge against his whole profession founded on the misconduct of any one individual member of it, so I do the same on behalf of the profession to which I have the honour to belong. The practice he refers to is absolutely unknown to architects as a body, and I greatly doubt if he can really cite an example.

I think I have a right to require him to furnish me publicly (or privately, if he prefers it) with the name of any such individual, and should it be possible that he can be one of the 600 honourable men who are members of the Institute, I pledge myself that, on such a charge being proved, he shall be expelled that body forthwith.

If he be not a member of the Institute, I can only leave to "A London Parson" to exercise that charity which it is his mission to preach to others, and to ask him to believe that the so-called architect to whom he may refer is no representative of that profession whose title he has presumed to usurp and to disgrace.

Charles Barry,
President of the Royal Institute of British Architects.

Institution of Surveyors.—The next meeting will be held on Monday evening, January 15th, when a paper will be read by Mr. W. T. Marriott, entitled "Riparian Rights."



Gables at Stamford.

Old George Inn, Huntingdon.

Head-quarters of Henry VII. on his Road to the Battle of Bosworth.

Old Row in Manchester.

ANCIENT HOMESTEADS OF ENGLAND.

THE very prettily got-up book published under this title* is one for the drawing-room rather than for the architect's library. It is none the less desirable on that account, of course, from a certain point of view; only as the author draws attention to the fact that our cathedrals and churches have mostly been adequately delineated as well as our ancient mansion-houses, it rather looks as if he were professing to do for the old street-houses what others have done for the greater class of buildings named. His illustrations cannot quite claim this place. They can be of no particular value to architects (except as furnishing a pleasant characteristic volume to lay on the table for turning over), for this reason: that the engravings furnish little or no evidence as to that part of the character of the buildings which depends upon details of construction and material; they are simply wood-engravings in tolerably good conventional style; they make nice pictures, but are deficient in distinctive character. Moreover, we should be disposed to doubt whether all the illustrations are, as the title-page description would seem to imply, from sketches made purposely by the author. They are in some cases so conventionally made up as to induce a considerable feeling of scepticism. Take as an instance the view of the "Jew's House at Lincoln" (p. 198); in the first place, no notion can be got of the house from this engraving, which shows it in perspective at one side of the view, and blackened over with shading lines; and the view has none of the character of the place. It is some years since we saw it, but no one who has ever visited Lincoln can forget "Steep-hill," upon the declivity of which this house stands, and which is here represented as a wide street with a gentle declivity, instead of the narrow precipitous street which (unless our memory has played us utterly false) is really there. No one who knew the Abbot's Bridge at Bury St. Edmund's, either, would accept Mr. Rimmer's engraving as giving any notion of that beautifully characteristic bit of Mediæval masonry. Many of the illustrations are much better than these, but the want of real truthfulness of local character which such examples imply makes all the difference in the value of the book from an architectural or artistical point of view.

Taking the book from a "general reader's" point of view, there is much more to be said in its favour, and we are glad that such a book should be published in a form that seems likely to prove attractive to many who have not thought, perhaps, how much of picturesque interest there is in old houses, even of a plain and simple description. The preface by the Dean of Chester contains some suggestive remarks. Whether the extensive prevalence of works of "restoration" in connexion with our cathedrals and churches can be accepted as a testimony of "the high appreciation of the importance of history written in stone," many of our readers will probably regard as more than doubtful. But in reference to the direct object of the book, Dr. Howson's remarks are much to the point, and show that he travels with his eyes open both to the present and the past. The interest of the long winding street of Kendal, "where the ground rises and falls boldly, and where even now the houses are so varied in character that on days of light and shade they supply many good subjects for pictures," is increased by the fact that through this street "the troops of Charles Edward marched or straggled in 1745, both on their way to Derby and on their return."* Another instance of local peculiarities, not touched upon in Mr. Rimmer's book, is mentioned in the preface as exemplifying the sort of slight but interesting type of relics of which it is worth while to make a note and preserve a record:—

"A second example is supplied by village after village in that widespread county of the dales which lies south-east of Kendal. Through Airedale and Ribblesdale, from Bradford to Lancaster, and northward to some considerable distance, there are a multitude of specimens of a curious kind of doorway which I do not recollect to have seen elsewhere. These doorways generally consist of two curves, more or less regular, and more or less enriched with ornament, and with the initials of the families of some now-forgotten dalesmen: the dates range from 1630 to 1730; the earlier forms are simpler than those which follow; and after the later period they seem to cease suddenly. However this provincialism of rural architecture is to be explained, it is a social and artistic fact worthy of being observed and permanently recorded.

Mr. Rimmer, who is, as he tells us, an inhabitant of Chester, of course devotes a good deal of space to that most interesting, so far as the picturesque of street architecture goes, of all old English towns. Chester has, we need not observe, already been very largely illustrated; but it would be out of the question to pass it over slightly in any book treating of the picturesque remains of street architecture. The practical side of the Chester-row architecture is touched upon, and the remarks of "an American gentleman of great intelligence," whose name is not given, are quoted, and are certainly to the

* Ancient Streets and Homesteads of England. By Alfred Rimmer; and an Introduction by the Very Rev. J. S. Howson, D.D., Dean of Chester. With 150 illustrations from drawings by the author, engraved by J. D. Cooper. Macmillan & Co.

* On the same kind of ground of historical interest we give the illustration of Henry VII.'s head-quarters on the way to Bosworth.

point. During a recent discussion at the Institute of Architects upon "business architecture," it was urged that the Row system of Chester, though picturesque, was not, therefore, unpractical; we have here the evidence of a visitor from the most practical of nations to the same effect. "Chester," said this American witness, "*is far beyond any city we possess in the New World in point of convenience.* Country towns are run up there on a uniform plan, and in some of the streets in the cities of the far West are great blocks of pretentious warehouses and stores that look like bankruptcy itself. A tradesman commencing business has little option,—he must either take one of these or else he is out of the world. And if he takes a place that is so much too large for him, he has to purchase more goods than he can pay for when the time of payment comes round. I speak," he said, "of no imaginary evil, but one that actually exists, as I have found out to my cost; but here, in the Rows, are shops and stores of all sizes, so that a tradesman commencing business may suit himself with premises to his proper requirements, yet not be out of the business world." We thank Mr. Rimmer for publishing this important practical commentary on business architecture, to which we are glad to give further currency. The remark recalls one which was made to ourselves by a respectable and well-educated tradesman, whose opinion we asked as to the architectural suitability of some very costly and ambitious-looking new buildings for shops. His reply was that the persons who took shops of that kind were generally those who were starting business on pure speculation, and wished to make a great "splash" at the outset,—so curiously is ostentation in architectural style connected with ostentation in character and principle. The last illustration in the work is an interior view of an old staircase in the author's own residence in Chester, which shows the baluster form in the stair-rail, not in solid turned balusters, but with the baluster outline cut out in the flat; a sort of imitation of the genuine baluster, which is only now and then met with. This is the only interior view we noticed in the volume, the author's object being evidently the external characteristics of the buildings; but it reminds one how much might be made of illustrations of old staircases, of which we fancy there is no lack of good instances in his own neighbourhood. The old rectory of Tarporley, a few miles from Chester (now, we believe, rebuilt), contained an old staircase with massive handrail and thick twisted balusters, which would be the delight of the enthusiasts of the "new movement" in architecture; this originally came from Utkinton Hall, a large old building in the neighbourhood, now a farm-house: we hope it has been preserved in the new rectory-house or elsewhere.

Much of the interest of old domestic architecture in the various districts through which the author takes us is centred in the old inns, the requirements of which in regard to plan seem to have furnished so much opportunity for realising a picturesque character in the most natural and simple manner: the inner courtyard, the entrance archway, the external stairs and open gallery on the level of the upper floor towards the courtyard, are frequently-recurring features, and almost make a picturesque character inevitably, however they are treated, so long at least as the treatment is natural and suitable. The Old George Inn at Huntingdon, of which we reproduce the illustration, is one of the simplest and most unpretending of those illustrated, and also one of the most specially pleasing. We do not think, however, that it is of any use to aim deliberately at making over again the kind of charm which certainly belongs to these old-fashioned inns. The author has some remarks in one part of his book upon this point, and deprecates the idea that an attempt to realise the same characteristics of the picturesque in a new building, which we admire in an old one, should be called a "sham"; and no doubt this kind of purism of principle may be overdone till it becomes itself an affectation. But the real interest of these old buildings to us arises from the fact that they were not *intended* to be picturesque, originally; they are simply natural; and their lesson to modern builders is to build in a natural way; to build just what is wanted and how it is wanted; which is what we so seldom get. Buildings which are so designed may look interesting to our descendants, because they will afford a true history of the requirements and habits of our own day. Mr. Rimmer hardly shows a sufficient appreciation of the fact that a great deal of the interesting impression of the old buildings is due to historical causes rather than architectural. The carriers in the inimitable little scene at the inn, in "Henry IV.," which the author quotes, never saw the inn as a place of picturesque interest; all they cared about was that they had not been properly looked after, and that "the house was turned upside down since Robin Ostler died." What makes a modern inn of the same relative calibre (not to speak of the "grand hotel,"—an entirely modern growth) so comparatively uninteresting to ourselves, is in the first place that it has no backward association or memory, which always gives an interest to a place when it is real; but also that it is not, like the old inn, a natural expression of the arrangement and the way it is planned: on the contrary, all this is carefully concealed in a uniform cubical screen of brickwork. This dull uniformity is really the legacy to us of the Renaissance Italian mansion, adopted first as a fine and grandiose form of building a large and costly dwelling, and then filtered down to the humbler structures, in which the rich and grandiose effect has vanished, and all that is retained is the uniformity, which was "dignity" in the palace, but is only "dulness" in the road-side house. It is important to take fully into account this interest of association, to avoid exaggerating the purely architectural merit of old bits of building. Mr. Rimmer gives a view of an old outhouse over a gateway in the premises of Nell Gwynne's birthplace at Hereford, and says, "some parts of it are suggestive to modern designers." This is really going too far: there is absolutely nothing in the structure, except that it is old; and the same might be said of some others of the illustrations. There are some, on the other hand, that we should have liked to have seen illustrated, as the author went over the ground. In Suffolk, for instance, the gatehouse of the park at Long Melford is most peculiarly picturesque; and in Northamptonshire, the name of which county hardly appears in the book, what is now the Talbot Inn at Oundle is one of the most charming old houses to be found in the whole country.

The illustrations we reproduce, besides those already mentioned, we have selected for the special qualities they exhibit: that from Manchester as indicating the former character of a city the name of which is hardly now associated with the picturesque of "ancient homesteads," and showing also how very little will suffice to give an interest to street architecture of a humble class. The illustration from Stamford shows a very effective treatment of gables having rather a Continental feeling, and suggestive as a "motive" in domestic architecture. The oblique gables in Warwick (p. 234), not amongst our illustrations, are an odd curiosity of building, by no means to be wantonly imitated; they remind us that the salient point in a very powerful charcoal study, by M. Lhermitte, in the last "Black and White" Exhibition, of some old houses somewhere abroad, was made by just such an oddly-introduced piece of skew-work as this. The little mullioned and glazed gable (p. 142) from Ockwells is a bit of really good and characteristic architectural design, and would look well anywhere, in a new or an old building, apart from all question of association.

An interesting extract is given in the closing chapter of the book, from an old contract for building a chapel to St. Mary's Church, Chester,—a document which, as the author observes, exhibits "a touching simplicity and confidence." Thomas Betes, mason, contracts with William Troutbeck, esq., that the said Thomas "shall make a chapell in the churchyard of Ste. Marie on the Hill, on the south side of the chancell of the said chirche there, that is to wete, the est end, the south side, and the west end, contayning the length of the chauncell, and xviii fete wide within the walls, *and as high as hit nedes reasonably to be;*" then follow brief directions as to three- and four-light windows in different positions, "and on the west ende in the best way to be deviset," and as to "iiij botras," and a battlemented parapet, "and at ayther end iij honest fynials. And the said William shall pay the said Thomas xx li. like as the worke goes forward, and also give him a gowne." The date of the document is not stated; it must have been late in the style, as the church itself is, if we remember rightly, a late one. We like the direction about the "three honest finials" very much; as to the temptation to moralise about the superior beauty and simplicity of such a mode of building, compared with the conditions of a modern contract, it is one to be avoided, as leading to "fantasies" which are of no practical value in these days. The one or two cases we can call to mind of houses erected under this kind of honourable understanding with the builder as to what "nedes reasonably be" have ended in—lawsuits; which is likely to be the natural termination of such arrangements when life is so crowded that it is absolutely necessary for most men, as a condition of making their living, to calculate their expenditure and receipts in the most careful manner. We doubt whether there is anything particularly romantic, after all, in being unbusinesslike; and it is a quality that leads to a great deal of trouble between man and man. The author seems to be alive to this, too; one comment, however, which he does make is, that the elastic nature of the provision as to the height of the building left room to the mason to judge, when the building was getting up, how high it required to be, for appearance sake, and build it accordingly, instead of trusting to a drawing. Such a way of working, however, could only be convenient in a slow-moving society, where there was a wide margin for profit; and we may go further and say that its desirability on architectural grounds would depend on the more or less refined and finished form of design that was aimed at. Those who would say, on reading such a passage, "how artificially we build now," might equally go back to the records of Greek building, and say, "how artificially they built then," and yet with what noble results. The passage, in fact, contrasts significantly (which was one reason of our quoting it) with the inferences to be drawn from those inscriptions in reference to the works at the Erechtheum, which we drew attention to the other day (p. 1234, vol. xxxiv). Another conclusion Mr. Rimmer draws from the "Chapell" contract is that architect and builder were the same person in those days. There is much difficulty in getting at any definite conclusion on that point, we admit; but it certainly strikes us as odd that the author should cite this passage as against the idea of a directing head of the works (such as would now be called an architect), when it is distinctly stated that Thomas Betes was to do the work "*by oversight of Maester John Asser.*"

We shall be glad to meet Mr. Rimmer again; he infers an intention of extending the same class of publication further. We may perhaps be excused for hinting that his writing is best when he keeps to the matter in hand; the literary style of the book is somewhat tame, and its value consists rather in the information given than in its literary form; and in his reflections on p. 168 as to principles of colour in buildings, he does not seem to be aware that the statements about complementary colours and the absorption of rays, &c., are the merest commonplaces; nor does he show in the least what connexion they have with his subsequent remarks on brickwork, though with these latter we quite agree in the main. Mr. Rimmer talks of a book on "The Gateways of England"; there could not be a more charming subject for illustrative treatment; but we should certainly wish to see it done with a little more reality and truthfulness of local character in the illustrations, and more attention to details of structure and material than we find in the present volume.

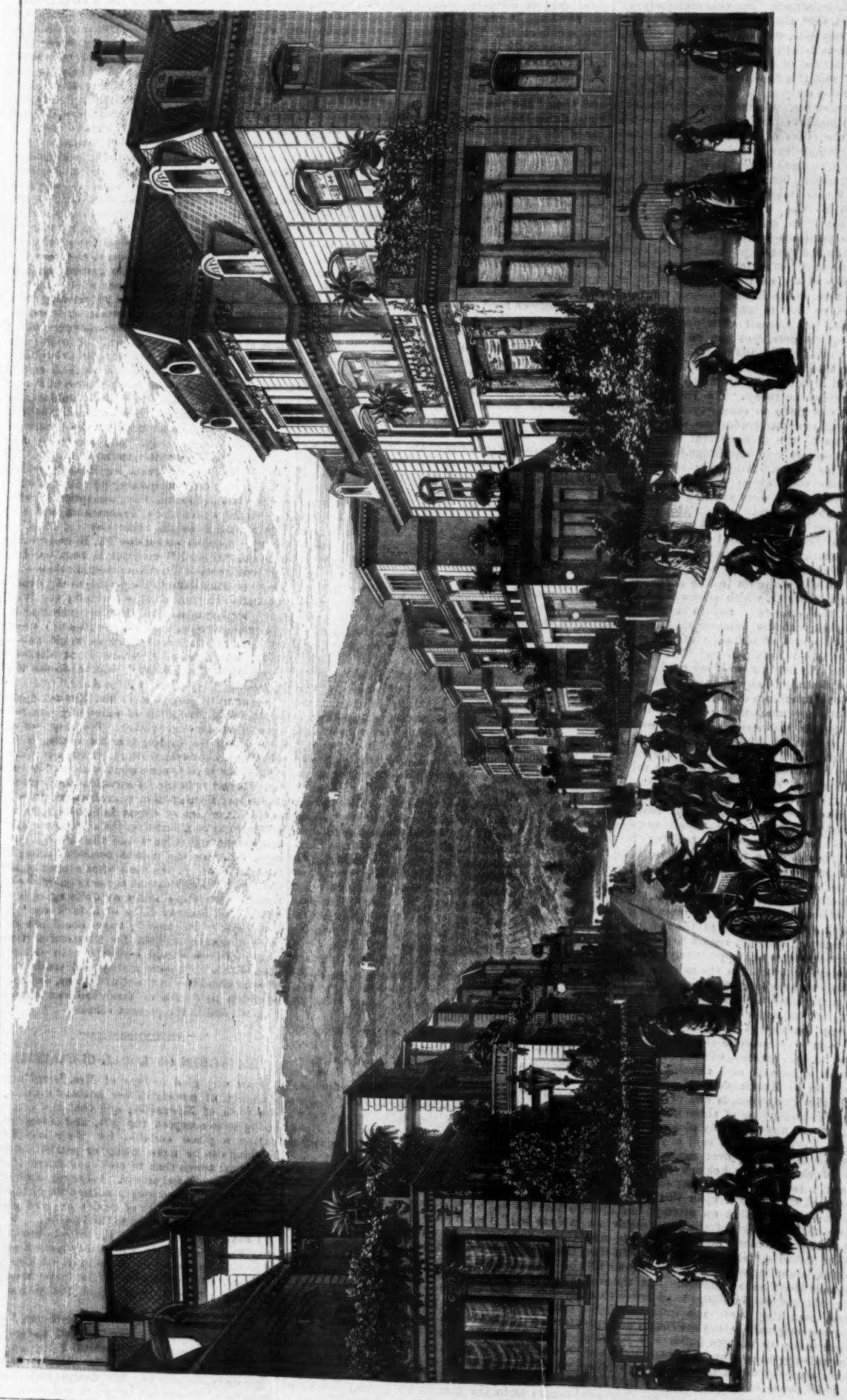
THE WORKS OF LOCAL CELEBRITIES.

I AM very glad to hear of Mrs. Lough's presentation of models of her husband's works to the town of Newcastle; and that the municipality have accepted the gift, and intend preparing a place suitable for their reception. Nothing can be more fitting or patriotic in our provincial towns than to make collections of the productions of local artists. It excites emulation in the rising generation; it adds to the historical evidences of the worth of their sons; and gives great individual interest to the locality.

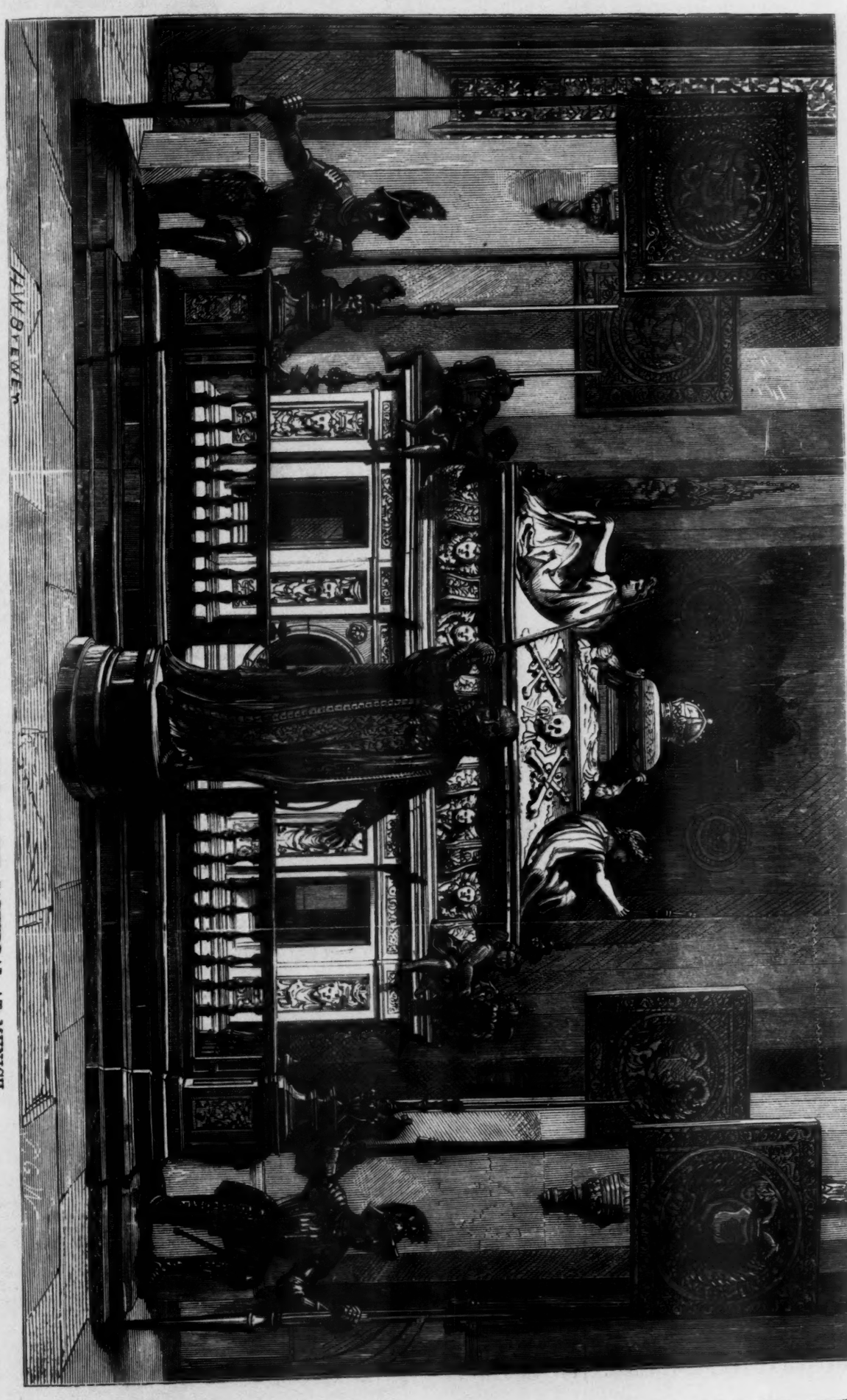
I have found that to be the case in towns all over France and Italy, where they make a point of forming museums of like nature, whether for painters, sculptors, engravers, or other men of eminence; and I have urged the theme in England.

What has Devon done for its Northcote, Eastlake, Haydon, and other marked names in English art or science or literature?

All honour to Mrs. Lough for this step in the right direction, and may her example be followed by others. Ought not Dublin to get possession of her Foley's works? T. L. D.



A NEW STREET IN STUTTGART.—Professor Gsauth, Architect.



MONUMENT OF THE EMPEROR LEWIS THE BAVARIAN, IN THE CATHEDRAL AT MUNICH.

GOETHE-STREET, STUTTGART.

ONLY twenty years ago, a house built of stone was a scarcity in Stuttgart, although the heights surrounding the valley in which the town is embosomed furnish ample material for such constructions. What a change has taken place in the architecture of the capital of Würtemburg since then! There can hardly be another town the architectural features of which have been so radically changed as those of Stuttgart. This transformation is especially noticeable in the outlying districts of the ever-increasing city, where, thanks to the two architects, Leins and Egle, there rises now an amplitude of handsome buildings erected in the cheerful forms of the best Renaissance.

The illustration which we give in this number represents one of the most recent creations of Stuttgart. It is the Goethestrasse (Goethe-street), which, beginning in one of the best quarters of the city, runs past the railway station in a straight line to the foot of one of the steeper heights which surround and look down upon it in their garb of the fresh green of vineyards. The street was undertaken by a building society, and erected after a uniform plan. Its architect, Professor Gnauth, is a young man who, greatly to the regret of the lovers of architecture, has taken lately to the pallette. It will be seen that the treatment of the street is in accordance with its suburban situation, half town-house half villa, forming an agreeable picture of refined opulence in tasteful half-rural dress.

MONUMENT OF THE EMPEROR LEWIS, THE BAVARIAN, IN THE CATHEDRAL AT MUNICH.

THE Emperor Lewis, the Bavarian, was elected to the imperial dignity in the year 1314, and reigned until 1347. His monument in the Cathedral Church of Munich was not erected until very many years after his death. It consists of two perfectly distinct works, the first of which is a magnificently carved grave-slab of marble representing the Emperor in a standing position with his imperial robes, sceptre, &c. Over the figure is a most elaborate late Gothic canopy, the whole is treated rather flatly, and is a delicate and beautiful example of late Third Pointed sculpture work. The second portion of this monument consists of a very elaborate kind of shrine or temple erected over this slab. This shrine was set up in the year 1622, by the Bavarian Elector, Maximilian I., and was designed and executed by Peter de Witte, known in Italy as "Candido," a pupil of Vasari. His works are pretty numerous in Germany, and amongst others the Statue of St. Michael, in front of St. Michæl's Church, Munich, a fountain in one of the courts of the old ducal palace in Munich, the decoration of the old castle at Landshut, and a fountain in Augsburg, are worthy of notice.

The monument of Lewis, the Bavarian, is a fine work of art; it is constructed of black and white marble, but all the figures, which are life-size, are of bronze, as are likewise the great heraldic banners. On either side of the monument is a finely-executed statue. One represents Duke William V., and the other Duke Albert of Bavaria. At the angles of the monument are knights in full armour, bearing standards. A balustrade of bronze runs round the tomb, upon the "podia" of which are candlesticks bearing large wax torches. Above the tomb are figures of angels bearing the sceptre, crown, &c. The skull and cross-bones are introduced into the decorative carving of the upper portion of the monument, and are the only portion of the work which is not artistic. It is said that De Witte did not live to finish this monument, and that it was completed by Hans Krewzer; and it is possible that he may have executed this portion of the work, as it does not seem to go at all well with the other parts of the monument. In the sides of this shrine are square and oval openings, through which the more ancient monument previously described is visible.

Architecture at the Royal Academy.—We are glad to hear that Professor E. M. Barry will this year deliver a course of six lectures, commencing on Monday, February 26th. The others will follow on March 5th, 12th, 15th, 19th, and 22nd.

ARCHITECTURAL NOTES BY AN IGNORAMUS.

THE DECLINE OF THE POINTED STYLE—THE RENAISSANCE IN ENGLAND AND SCOTLAND.

THE aspiration of religious faith is the soul of the Pointed Style, and the eye of faith waxed dim under the influences of the sixteenth century. To this many causes contributed. The profligate lives of such Popes as Alexander VI., the infidel speculations and classical propagandism of the school founded by Leo X. and his adulators, aroused the indignation of truly religious persons, and powerfully tended to bring about the great change of the Reformation; whilst they awakened a taste for styles different from that in which the spirit of the Middle Ages had been embodied. That spirit had found its noblest and worthiest expression in the great churches of France and Germany. In Italy the style never fairly took root, as might have been expected from the historical antecedents of that country, though Milan, Sienna, and Viterbo afford examples which are eminently deserving the study of architects. There is no reason why we need feel jealousy or shame at the inferiority of English Mediæval architecture to that of the Continental countries. For more than four centuries after the Conquest, England was seldom free from the dangers of foreign war or domestic strife, and, with its trade and manufactures undeveloped, was one of the most backward countries of Europe. It was not to be expected, therefore, that its architecture should vie in sumptuous magnificence with that of France, which our greatest poet has styled "the world's best garden," or that of the Rhineland and Southern Germany, which carried on a flourishing and lucrative commerce with Italy on one side and the Netherlands on the other.

It is remarkable that, as the Romanesque held its ground 200 years longer in England than in France, so the Pointed style survived much longer in the latter country than in the former. The last English example is Bath Abbey Church, built in the reign of Henry VIII.; but Orleans, one of the noblest cathedrals of France, was raised in the first half of the seventeenth century. It is a splendid example of the Second Pointed Style, conceived much in the spirit of the Norman builders, and exhibiting nothing of the tenuity and consequent fragility which is seen in some of the Third Pointed churches,—as Metz and Amiens. The explorer of the recesses of the triforium in the latter cathedral finds imbedded in it a thick iron chain-beam, which is carried round the whole fabric, showing that the height had been discovered to be excessive in proportion to the breadth; or rather that the construction was not sufficiently solid to prevent fears for its security. The exterior of Orleans, we are inclined to think, is the grandest of any of the French cathedrals, and every eye must be delighted with the lofty and richly-sculptured transeptal gables, upon which the three Hebrew letters of the name of the Supreme form a conspicuous ornament, and with the diadems which crown the three towers of the centre and the western front. That such an edifice should have been raised after the exhaustion consequent upon the desolating strife of the wars of the League, proves the strength of the religious feeling excited by the Roman Catholic revival, whilst it stirs wonder at the inexhaustible resources of the territory. But we are already far advanced into the days of the Renaissance, and the finest example of that style, St. Eustache, in Paris, shows us the last Mediæval builders reverting to the elongated Romanesque form which we described in our first note, and which the Kaiser-Dom or imperial basilic of Speyer had preserved from the eleventh century.

It is not necessary to say much as to the distinguishing features and comparative merits of the different styles of Mediæval architecture, since these are known more or less accurately by all who have given the subject their attention. The Pointed, with its endless array of decorative detail, its flying buttresses, gargoyles, niches, and corbels for the exterior, its fret-work and canopies, cusps, crockets, and finials, for the interior, for all of which devout ingenuity finds a symbolic meaning, affords the greatest scope for the ingenuity of the architect. The bare wall spaces of the Romanesque style, on the other hand, require the aid of the painter and the sculptor to adorn their nakedness, and afford ample room for pictorial designs. We have already alluded to the effect of the interior of Speyer, and one of its most splendid features is the series of Scripture subjects painted by the artists of Munich on the blank interval of 20 ft. or 25 ft. between the summit of the arcade and the foot of the clearstory. The chief symptom of decline which heralded the discontinuance of the Pointed, was the excessive ornamentation of exteriors, which were sometimes beautified to such a degree as completely to outshine the interior. The most remarkable example of this is Strasburg, where we have a false western frontal 200 ft. high, with a steeple of 460 ft. rising from it, which, taken by themselves, are amongst the most wonderful achievements of the architect, but are joined on to a second or third-rate interior, which disappoints every one who enters it after admiring the outside. Even greater is the contrast between the richly carved exterior of Abbeville, and the shabby inside it conceals. Something not dissimilar in effect is found in our own Peterborough, where a fine and elaborate west front is prefixed to a round-arched interior of dismal plainness; but this was one of the consequences of the enormous length of time over which the construction of the large English churches stretched, whereas those of France seldom occupied the whole term of a generation betwixt their commencement and their completion. Our own times have witnessed a marvellous revival of the Mediæval styles, upon which I need not dilate, because the subject is continually treated, and instances presented, in the columns of the *Builder*. I may, however, be permitted to specify the Cathedral of Boulogne, erected within the last thirty years, as a splendid example of the form called in these notes elongated Romanesque, whilst the Votive Church of Vienna (lately engraved in the *Builder*), and in our own country the Roman Catholic Cathedral of Salford, and the Basilic of Arundel, are amongst the finest examples of Pointed architecture.

The multiplex and incongruous forms evolved by the mixture of the Classical and Mediæval styles in the Renaissance are often such as words cannot make intelligible without the aid of the engraver. Few of the provincial towns of France are without an example of it in some of their civic or ecclesiastical edifices; amongst the latter, perhaps, no more remarkable examples can be found anywhere than the churches of Falaise and of St. Étienne du Mont in Paris. For domestic architecture, the English Elizabethan style is unsurpassed by any other. Such mansions as Knowle, Cobham, Audley End, and Haddon Hall are amongst the most cherished monuments of the past our country has to show, and sufficient of themselves to vindicate English civic architecture from the charge of inferiority or commonplace. The development of the Renaissance style in Scotland is less known. Less sumptuous and ornate than that of England, as might be expected from the comparative exiguity and poverty of the country, it is hardly less interesting in itself, and exhibits features of a difference which can only be explained by the greater authority of Continental influences north of the Tweed. So early as the first half of the fifteenth century, Crichton Castle, erected by Chancellor Crichton, presents one of the best existing instances of the palace castle, in which the object of mere protection or defence is subordinated to that of domestic comfort and luxury. When Dr. Johnson visited Scotland in company with his *fidus Achates*, Boswell, he complained that he had seen no castellated ruins worth minding, though he had been led to expect that he would find a good many. When at Edinburgh, he had three of the finest in the island almost within a stone-throw, though he seems never to have so much as suspected their existence,—Craigmillar, the favourite residence of Queen Mary, Borthwick, and Crichton, each presenting a different phase of the old military style. Poor Dr. Johnson! If he had been taken to see them, his eyesight was so bad that he would have been very little the better for it. Intermediate between the Gothic and the newer form of the Renaissance is another extensive ruin, the Palace of Linlithgow, built by James IV., one of the most interesting remains of the Scottish Middle Ages. The archivolts of the deeply-recessed windows, and the pyramidal roofs which crown the massive square towers, show the preference of the architect or his royal patron for the contemporary Continental fashions. But the most distinctly-marked Scottish building of the Classical Renaissance type is the palace in Stirling Castle, erected in the minority of James V., and now tenanted by one of her Majesty's infantry

battalions. This is a beautiful example of the Italian style of the sixteenth century, more advanced than any of the English edifices of the same period, which are all in the well-known Tudor style. It is sincerely to be hoped that the Government will interpose before very long to rescue this fine relic from the decay which is fast overtaking it, and to restore to their pristine integrity the emblematic statues which adorn the front. Another building which may be mentioned, because it is one of those overlooked in the great collection of Billings, to which all students of architecture are so much indebted, is Dalziel House, in Lanarkshire, one of the best specimens of baronial mansions in the Renaissance style, with turrets, bartisans, gabled windows, and richly-carved wall-plates, showing the *fleur-de-lis* and the thistle in amicable conjunction, and taking us back to the days when Mary was Queen of France and Scotland. It was built by the Earls of Carnwath, and seems to have escaped the notice of Sir Walter Scott, who does not allude to it. One of the most cheering symptoms of the great architectural revival which the present generation initiated, and which is still vigorously proceeding, is the conscientious zeal with which architects look upon the best models both of their own and foreign countries. For our own parts, we confess that we rejoice in this, because it is a continuance of the same course which has produced the greatest and worthiest working of architecture, and infinitely preferable to the hunting after original styles, which can only lead to the production of monstrosities.

THE ENDOWMENT OF GENIUS, NOT RESEARCH.

SIR,—The article on the "Endowment of Research," in the *Builder* of last week, reminds me that I once addressed a letter to you on that subject which, at the time, met with some favourable response. In that letter, if I remember rightly, I took exception to the title "Endowment of Research" as one indicative of only a partially developed notion, of which the complete and final expression should be the "Endowment of Genius," or, as the writer of the article in the *Builder* well puts it, the "endowment of those who are best fitted to pry into the constitution of nature."

The difficulty is, however, to get at such men. The world, or at least the *British* world, invariably overlooks the highest order of intellects. The men who are really competent to advance an art or a science, from the very fact of their advanced views, must as a rule, be at variance with received notions, they are, therefore, generally regarded as "disturbers of the peace" by those professors who either from indolence or the want of ability are content to leave the dicta of the mighty dead undisturbed, to rest and be thankful, and to pursue the customary teaching with Chinese fixity. And yet I will hazard a prediction that the larger share of a fund for the Endowment of Research would be allotted to men of this order. People, English people, have not as yet the acumen to distinguish between the dreams of genius and those of mere enthusiasts and schemers. The previsions of the former are invariably either passed over or condemned with the unsubstantial fancies of the latter. The thoroughly English saying that "the inventor or originator of any good thing never gets the credit of it" shows, not only how unfitted the nation is to recognise those who are best fitted by nature for any good work, to advance arts and sciences,—I say the proverb not only shows this, but how material that British morality must be which can recognise the rights of property in goods and chattels, but not in ideas; how material that morality must be which can wink, nay even laugh outright, at the most barefaced and villainous raids by freebooters upon property in ideas,—upon property upon which the inventor, the discoverer, the thinker, may possibly have spent much money, or at all events an unknown amount of time and brain-work.

The man who is to be a great benefactor to the world by the labour of thought must lead a life apart from the busy world, at least a life different from that commonly led by the great bulk of the people; this lays him open to misconstruction and to be over-reached by thieves. Great thoughts require long incubation and self-denial, a husbanding of the vital powers which fools cannot understand. It is these very powers of self-denial and endurance which justly entitle a man to honour and pecuniary assistance, but which at the same time from a lack of discrimination and appreciation on the part of the public, render him liable to be overlooked, and to be left to struggle on unendowed through his work.

England must mend her ways in these matters if she is to keep her intellectual work in advance of other nations. There is a depressing conviction among the brain-workers that they will be despoiled of their own, and that their lives will be lives of difficulty. We may comfort ourselves by imagining that England is equally well served at second-hand, by the despoilers, by the men who usurp the honours and the rewards due to the real benefactor; but it is not so. It is true, to a certain extent, that it is easier to carry out than to originate an idea; but, nevertheless, the pick-brain can never give the vitality to its practical application that the originator can. I am speaking now more immediately of schemes of reorganisation and of reforms. Besides, the despoiling of men of what is their due, checks them both from devoting great powers to the service of their country, and often from publishing many valuable ideas, so that the nation suffers incalculable loss from its lamentable policy towards the brain-workers. If, therefore, we cannot find out the great men and endow them, let us have no such pretence as the endowment of research, which will enable ordinary minds to preserve the *status quo* and to more firmly bolt the door against genius.

METER.

ANGLO-SAXON ARCHITECTURE.

BRIGSTOCK CHURCH.

AT the recent meeting of the Architectural Society of the Archdeaconries of Northampton and Oakham, lately referred to in our columns, Mr. R. H. Carpenter read a paper on the Parish Church of Brigstock. At the outset he observed that although the church of St. Andrew, Brigstock, in point of size and richness of detail takes but second rank among the magnificent churches for which Northamptonshire is celebrated, yet in interest, based on extreme antiquity, there are few buildings that equal it in the whole of England. He pointed out the difficulty experienced in fixing the period of the Anglo-Saxon time, when the church was erected, but his conclusions seemed to favour a middle period. It was recorded by William of Malmesbury that King Alfred, who reigned at the end of the ninth century, erected "new edifices in a manner surprising and hitherto unknown to the English," and it was within this period, when England was settling down after the disturbed times of the Danish invasions, that the churches of Earls Barton, Barnack, Barton-on-Humber, Worthing, and Sompting are generally supposed to have been built, and Brigstock, so far as its early work is concerned, was rebuilt; for here and there in the walls of both tower and turret are found many stones burnt through, and turned of a red colour, by the action of fire, leading to the presumption that in the ninth or beginning of the tenth century a rebuilding was necessary through the destruction of an earlier church by the Danes, the materials of which were re-used in the new church. It is quite possible, however, that the churches of the Mercian kingdom may date before 823, when the battle of Cellandum was fought, and the great power of Mercia fell. Mr. Carpenter then exhibited the plans and some of the elevations of several Anglo-Saxon churches, viz., Earls Barton, the restoration of which is under his charge; Deerhouse, and Brixworth, restored some years ago by his late partner, Mr. Slater; and Sompting, which his father restored in 1854. The plans showed a likeness between the towers of Brixworth and Brigstock. Both have the large western circular stair-turret, and both of them resemble Deerhurst in having been probably used as dwellings, as well as for bell-towers. It might, too, be inferred from this, that they may have been erected in the more troubled times before Alfred, and used as strongholds. Certainly the massive iron-bound door at the foot of the Brigstock turret, if, indeed, it is the original one, would only have been made so strong for purposes of defence. Both before and after the Norman conquest all the district in which Brigstock (in Doomsday Book called Bricstoc) stands, was covered by a dense forest belonging to the Crown, and, as in Sussex, these woods became available for the ironworks established in this district. The church remained under the patronage of the Crown until Henry II. gave it, in 1177, with the chapel of Stanion annexed, to Cirencester Abbey, and from that date there were seventeen priests in succession down to Elizabeth's time. She made one appointment to the living, after which the appointments were by the Viscount Cranbourne. The church as it now stands consists in plan of a west tower and stair turret, nave and two aisles, which extend to the line of the west face of the tower, chancel with north and south chapels, vestry and south porch. It has been burnt more than once, and has been altered again and again in every style from the ninth to the sixteenth century. Mr. Carpenter drew attention to four plans on which the successive alterations were shown. Referring to plan No. 1, he said the Anglo-Saxon work now standing is the tower up to the belfry stage, the turret stairs, the western angles and portions of the upper part of the nave walls, and the south angle of the chancel now incorporated in the southern pier of the chancel arch. The walls are built in exceedingly rough and large rubble masonry, with wide irregular joints with many burnt stones introduced. The angle quoins of the tower of the nave (of which Mr. Carpenter gave sketches) are of the "long and short work," viz., alternate upright stones, and very long bounding stones, all of great size and roughly hammer-dressed, with projecting stones at the base of each angle quoin. The arch opening into the nave is a very fine one in proportion and workmanship, and is well preserved. The stonework of the turret is of the small local stone marble, excepting four courses about 5 ft. from the ground, which are of large and roughly-squared Little Oakley stone, and the mortar inside was found to be as hard as the stone itself. In each angle of the tower cariole the stones are discoloured by fire about 2 ft. or 3 ft. from the floor, the turret door is charred on its face, and there was found in the nave close to the tower under the pavement a thick deposit of charcoal ashes. No indication of fire on the Norman work exists, going to show that the Normans restored the church after having suffered injury by a second fire. The doorway of the turret is of masonry, with a triangular-shaped head, joined by two stones leaning against each other, just as is found at Brixworth, Deerhurst, and Barnack. The door is a most massive one of oak, heavily coated with straps and bars of iron, probably from the local forges and mines; it is apparently the ancient one. The stone steps have all disappeared, leaving only the places in which they were let into the wall, and there is now a wooden ladder. At the level of the present upper doorway from the top of the ladder into the tower there was originally a floor, and then the stairs started again to an upper floor, where the present later belfry-stage now is. The turret is lighted by two square-headed windows. The top of the turret has a lead flat roof and stone parapets, of the date of this belfry stage floor. In the lower story of the tower, in the north wall, over a Norman arch cut through the wall, is a window (a similar one being opposite to it) with arches and jambs of roughly-worked masonry. It widens towards the bottom—a characteristic of Anglo-Saxon work. There is a recess left all round 3 in. wide and 3 in. deep, in which a wooden frame was fitted for the wooden shutters of the days when glass was not used. In the upper story, in its north and south walls are small semicircular-headed windows, with jambs and arch of very rough rubble stonework, these also having the recess for the frame. It has now been filled with a new one of oak, and glazed as regards the north window. The south window is blocked by rough stones and a monstrously ugly clock face, which it is purposed hereafter to remove. On the east side there was an opening (since blocked up) either into or on to the roof of the nave. The head was formed by rough oak lintels, so utterly decayed that the belfry stage and spire had become very seriously fractured through the sinking of the wood. The lintels, so far as it could be done with safety, have therefore been replaced by stone. It is not easy to say whether this lintel and the lintels over the upper doorway are original, but it is possible they are. Portions of the present clearstory walls are of this period, the walls having been kept up when the arches below were inserted. The height of the Saxon roof eaves is indicated on the outside south-west angle of the nave above the aisle roof by the change in size of the angle quoins and the rubble walling just about the level of the springing line of the tracery of the clearstory windows. It is therefore possible that if the plaster were removed from the arcade walls inside, that remains of the Saxon windows might be found,

ust as at Kingsthorpe Church they discovered the Early Norman windows and the later Norman arcade inserted in the old Early Norman walls. The old nave of Brigstock was evidently of lofty proportions. The small portion of Early work next the chancel arch was only discovered recently through the removal of the plaster. It formed, he believed, the south-east angle of the original sanctuary, beyond which would probably be a small apse, as at Deerhurst and Worth, and as at Brixworth, a chancel and sanctuary arch, for where the plan produced showed a chancel arch they found an early foundation projecting about 4 ft. from the column in the nave. Thus, he believed, they had arrived, as far as possible, at the original plan of the church as erected in the Anglo-Saxon days, and they had also reason to infer that it took the place of the still earlier one of the Angles, who inhabited the kingdom of Mercia, and to this church the burnt stones might belong. Possibly it might have been built by St. Wilfrid, then Archbishop of York, who built and founded a monastery at Oundle. Coming to plan 2, they saw that the Normans added a north aisle (probably not exceeding 7 ft. in width), opening by the two existing arches into the nave. They are very plain semicircular ones, and rest on a central cylindrical shaft, with a simple carved capital of probably twelfth century date. They evidently extended the aisle to the western face of the tower. The mortar used for the work at this period was very soft, like garden mould, as was unfortunately too frequently the case with Norman buildings, resulting in many failures. The builders seemed, indeed, to have lost the art of making such mortar as the Romans did, or even as the Anglo-Saxons. The church probably then underwent a restoration, through having been injured by a fire as before alluded to. At the end of the twelfth and early part of the thirteenth century, the south aisle was built with two now existing arches, and south doorway. This doorway is executed in Weldon stone, and has a richly-moulded semicircular arch, resting on shafts with moulded capitals, &c. This was the time when the church was handed over to Cirencester Abbey, and the new patrons were probably not satisfied with the small proportions of their chancel. They, therefore, set to work and built a new and much larger one, eastward of the older sanctuary arch. The new chapel had a north aisle attached to it, most probably as a chapel dedicated to the Blessed Virgin, for it was at this period that lady-chapels became a more important feature in the plans of churches and cathedrals. The south wall of the present chancel, the piscina, and some probable remains of sedilia, a portion of the east wall, and the whole of the north wall, are of this date. The width of the lady-chapel is conjectural. It is, however, certain that it did not then extend as far east as now, for the stone angle quoins of the north-east angle of the chancel are still visible for its greater height. He thought it probable that the two Saxon arches were left standing with the intermediate walls, for no traces of Norman or Early Pointed work exists in that space. The roofs of that day, like the Saxon nave roof, would be of a high pitch, with probably no clearstory to the nave. There are traces existing of simple painted decorations on the arches, consisting of lines and scrolls in red and black. They do not occur on any later arches, so they must belong to this period. Not very long after all these alterations,—perhaps only forty or fifty years,—changes were again made. Probably the narrow and dark nave and aisles were thought incongruous with the handsome new chancel, so they set to work again and just pulled down both aisles, leaving the arcades standing, and preserving a fine feature of the old work, the rich stone doorway, and holy-water stoup. They then rebuilt the aisles wider, and extended them up to the line of the new chancel and lady-chapel, adding an arch to each arcade. They evidently had a little difficulty on the north side, and had to fit the square plan of the Norman arch to their octagonal pillar by a new moulded capital of curiously irregular form. Whether or not they opened their arch into the lady-chapel is not clear, but at all events they had an altar, and therefore some sort of screen, wall, or reredos, for in the eastern piers still remains the moulded corbel on which stood the figure of the saint to whom the altar and its chapel were dedicated. The north doorway and the three-light window next to it are relics of the aisle last alluded to. The western extension of the south aisle, from present surroundings, was possibly used as a priest's chamber. After the aisles were finished the nave was taken in hand, the walls were raised some 3 ft. or 4 ft. with particularly small rubble stonework, and three clearstory windows were inserted on each side, and a new roof of a flatter pitch, covered with lead, like those of the aisles, was substituted for the old high-pitched roof. The chancel and lady-chapel were also improved. The former was rebuilt above the string course, with a beautiful reticulated tracery window of four lights, with most likely a fellow one in the extended and widened lady-chapel (as in the contemporaneous work then in hand at the chancel and lady-chapel of Higham Ferrers). The altar in the lady-chapel was raised four or five steps above the nave. The tower was added subsequently, and a new belfry-stage erected of well-wrought masonry, surmounted by a spire about 45 ft. in height. But it was late in the fifteenth century, about 1490, that the church assumed its present form, when the great idea then prevalent was to get as much more light as possible and stained glass into churches. For this purpose large three- and four-light windows, with flat four-centred arches, were inserted in the south aisle, and the north aisle was widened and covered by a new roof, the early three-light window and north doorway being inserted in the new wall. The upper part of the east wall and north wall of the lady-chapel were rebuilt (the old wall having been very much pushed outwards) with new windows and buttresses of the period. The chancel arch was rebuilt too, of fine and lofty proportions, and a chantry-chapel was built at the east end of the south aisle, opening by a new arch into the chancel; possibly this was done by Thomas Montague, of Brigstock and Hemington. The vestry and the porch, with a parvise over it (probably for the chantry priest), with its turret stairs, are also of this period. There seems, however, to be some,—as it has proved unnecessary,—fear felt about the stability of the new chancel arch, owing to the way in which it was built up against the older jamb, and through the removal of the east wall of the aisle. A double flying buttress was therefore thrown against it, springing from a massive buttress and pinnacle built against the south aisle wall, and in front of the chantry door. One arch of the buttress was under, the other over, the roof of the aisle. The work was, however, done in so unskilful a manner that the lower arch hardly held together, and owing to the sinking of the buttresses through wet soil it failed so completely that it formed an inverted curve, and the stones were tied together by iron straps. The upper flying arch, too, came away from the wall it was intended to support, and was also tied by iron. These arches had been rebuilt, but he (Mr. Carpenter) had changed the under one into a four-centred arch, like that on the north side, as being of a stronger form. The old stairs are, with one exception, re-used. The one excepted proved to be a part of an early and richly-floriated sepulchral cross, and it had been laid in the lady-chapel floor. The walls had as usual suffered much from the rising of the ground and the absence of drainage, which caused the rain to saturate the foundations. Owing to this the south aisle walls were pushed outwards, and the north wall of the lady-chapel to such an extent that a buttress had to be built. It, however, still continued to give way, pushing the old and new buttresses into the ground so as to cause the arch between the lady-chapel and the aisle to settle to an alarming extent. This arch they had rebuilt and tied in to the chancel wall by an iron rod. The roof, of the fifteenth century, with the exception of the eastern end of the north aisle, and portions of the timbers and wall plates of the lady-chapel roof, had all been re-placed by the sixteenth and seventeenth century roofs of simple but good construction. The earliest timbers, though they were most anxious to preserve them, were found to be utterly rotten, held together with straps, and in a most dangerous state. They were obliged to renew the principal timbers in strict conformity with the ancient work. Many, however, of the small timbers and rafters were replaced and showed at once their age by their dark-brown appearance by the side of the new oak. The nave roof required but few repairs, but the south aisle roof required many timbers renewed or spliced as the defective gutters had rotted the ends. The parapets in all cases have had to be repaired and refixed excepting those of the porch and vestry, for which they wanted further funds. The top of the porch turret is now covered by a rough flat wood and lead roof resting on solid stone slabs. It is most likely that there was originally a sloping stone roof as on the north side, and this it is proposed to replace. There is fortunately preserved a very fine bench of the richly carved and traceried style of the fifteenth century with some portions of well-carved drapery panels forming a front of rather later date. These show the manner in which the church was at that time reseated. As funds do not allow of such a rich style of seat, they were forced to be content with a simpler type, but the old seats will be cleaned and repaired and placed in the chancel with new seats corresponding with those on the opposite side. Fortunately, too, they were able to reproduce the arrangement of the fifteenth century, for on clearing away the modern floors they found the greater part of the dressed stone plinths on which the floor and bench ends rested in the fifteenth century. The chancel arch and the south chantry were separated from the nave and aisles by screens, of which the sills and a few portions of the lower parts remain, and also the raised dais in front projecting from the east wall, bounded by its ancient stone curbing. On this stands the original fifteenth-century pulpit in its original position. It is of lofty proportions, and rests on an oak stem spreading out to the upper portion, which has traceried panels. These have all been grained, but portions of the base, where hidden by the pews, still preserve their ancient red and green grounds, with patterns on them. The old painting will, no doubt, be found if the graining can be removed without injury to it. Portions of the stone and wood steps remain. The lady-chapel was once richly painted. On the north side of the window is a lofty canopied niche much mutilated, but showing traces of exquisite detail of painting. There has been a smaller one on the other side of the window, but it has been almost entirely destroyed. A portion of the north wall has traces of painting *in tempera*, but, with the exception of an angel and portions of a female figure, it is not now possible to make out the design. There seems to have been a screen across this chapel, with a loft on it, to which the existing turret stairs gave access. No traces of it now remain. The magnificent oak screen which now fills the western end of the chapel was, it is believed, brought from Pipewell Abbey in the reign of Henry II. The screen, with the exception of where it was cut away from a gallery, is in perfect preservation. It has, however, formerly been a parclose or side screen between two clustered pillars, one of which was circular and the other octagonal in plan, and the posts had been fitted to them. The lower part of the centre has been removed, probably to form the opening when it was re-erected in this church. The upper portion is being carefully removed, and it will be placed, as formerly, under the arch. The chancel roof is a modern one, and quite out of character with the church, and its western beam crosses the top of the chancel arch. This and other works will have to remain until further funds are forthcoming. What has been done, said Mr. Carpenter, has been done thoroughly and in a conservative spirit, so as to preserve to posterity the interesting and valuable work of nine centuries. Mr. Carpenter concluded by giving some interesting details concerning the fine old Manor House standing to the west of the church, which was of fifteenth and sixteenth-century date, and in the repairing of which he and his partner (the late Mr. Slater) were engaged some time since by the Duke of Buccleuch.

HYDRANTS IN THE CITY.

DURING the past year the Gas and Water Committee of the Corporation have done much to advance the provision of hydrants at high pressure in the City for extinction of fires and street cleansing. In their report of July 30th, 1874, the committee set forth the great importance of hydrants supplied with water at high pressure for immediate use in case of fire. The Court of Common Council at once adopted their recommendation, and they were instructed to take steps for the laying in of service-pipes at constant high pressure, and the erecting of hydrants in streets about to be repaved, at the first cost of 1,000*l*. On April 15th, 1875, they presented a further report, recommending thirty-six streets or places in which the pipes might be laid and sixty-four hydrants erected, which was approved, and the pipes were laid in accordingly. Again, in April, 1876, the committee presented a further report, seeking to obtain the sanction of the Court for a further expenditure of 2,800*l*. In utilising forthwith all the pipes which had been laid in by obtaining designs for the most im-

proved form of hydrant, and erecting the same without further delay. This report was also adopted, and the committee at once advertised for designs, and having received a number, gave the whole a very careful consideration, assisted by the engineer of the Commissioners of Sewers. In a short time we may expect that the hydrant found most suitable in all points will be selected and forthwith fixed in the several places already prepared for the purpose. The New River Company have for nearly two years had works in progress which are approaching completion, and which will have the effect of adding about 50 ft. of pressure to the service over the greater part of the City. In other words, it will enable a jet of over 100 feet in height to be thrown from the hydrants, instead of some 75 ft., as at present. Mr. James Edmeston is the chairman of the committee.

THE DISTRICT SURVEYOR OF NORTH BATTERSEA ON THE SPECULATIVE BUILDER.

UNDER the heading "Unhealthy Building at Battersea," in the *Builder* of December 16th, we drew attention to a letter addressed to the Wandsworth District Board of Works by the Rev. John Toone, vicar of St. Peter's, Battersea, in which the writer stated that houses were being built in certain parts of Battersea "upon rubbish and dust-shoots, without basements, and with boarded floors close to the earth, and that in scarcely any of the houses was there any provision for ventilation beneath the floors," the consequence being that there was considerable sickness in the locality. Mr. Toone's letter has been the means of eliciting a reply from Mr. H. J. Hansom, the district surveyor of North Battersea, in which some statements of a grave and startling character are made in reference to the manner in which building is carried on in the suburbs of the metropolis by the speculative builder. Without denying the allegations contained in Mr. Toone's letter, the district surveyor states that there is a great distinction between building operations in Central London and the suburbs. In the one case, he observes, architects are always engaged to plan, specify, and superintend, and builders of known ability carry out the work. Inferior material is unknown, or would be out of place. In the other case, the speculative builder appears upon the scene,—a creation or organism unknown to science or art, the outcome of the growth of London, and of the compulsory removal of the working classes in large numbers to the suburbs. Architects disappear in such circumstances, except where a church, school, or factory invites or engages them. Estates have to be floated, as it is called, frequently by capitalists or financial agents distinct from the freeholder, certain improved ground-rents have to be realised, the whole and sole object being a quick return for money. In continuation, the writer caustically sketches the character of which the speculative builder is the type. "The speculative builder," says Mr. Hansom, "is frequently or generally no builder at all. He may be a bricklayer, carpenter, or labourer, a mechanic or a tradesman, a butler or a retired publican. I know them from every class and grade of society. Even clergymen are speculative builders, and one in my own knowledge and rather sad experience (as he forgot to pay my fees) built five houses in Livingstone-road, and several hundreds elsewhere." Proceeding, the writer says that the great object of the speculative builder is gain without labour, "for," he observes, "the speculative builder never works. He looks at his venture once a day, and invariably goes to the City. Hence the demoralisation and deception, economy of labour being another term for bad work, and in material for the use of the worst and the least of everything, so as just to be consistent with the strict letter, or, rather, an evasive construction of it."

After endeavouring to show how even well-constructed houses are rendered unhealthy by the carelessness of tenants in reference to surface drainage being neglected and allowed to find its way under the floors of houses and so cause dampness, together with neglect of cisterns, water-closets, and ash-pits, Mr. Hansom makes a further serious charge against the speculative builder. It is well known, he says, that streets of houses are built before the roadway is formed, and that months and often years elapse before the main sewers are put in. As a consequence temporary and insufficient cesspools are formed at the back, and when, ultimately, the main sewer is put in, the cesspool, instead of being emptied and filled in with dry rubbish, is covered over with rough planks, and the old drain left. A few boards are removed from the floor, and a drain inserted through the house, undermining the front and back walls, and leading to future settlement. The socket-joints of the drain are neither cemented nor otherwise stopped, and the earth is thrown loosely on the top of the drain. Being laid nearly level, it gets partially or wholly stopped; the sewage, after a few days, begins to decompose and throw off fœtid and noxious gases, and the atmosphere of the house is poisoned with disease and fever-breeding agencies. He proves this to be the case from two instances he gives, and which came to his knowledge whilst in the exercise of his professional duties as district surveyor. In the one case he found a space only 12 in. under the floor of the house entirely filled with sewage matter, and had to clear it out and fill the space in with concrete. In the other instance, when the floor of the house was taken up, the points of the pipes were found to be unstopped, and lumps of clay thrown on, with gases escaping. He adds that in many cases he has found dummy drains inserted, which just enter the street, but are not connected with the sewer, and he suggests that such proceedings should be made "a felonious and indictable offence, or a grave misdemeanour and conspiracy to defraud and damage," so that the builders of houses so constructed might be prosecuted.

CHEMISTRY AS APPLIED TO ENGINEERING.

AT a meeting of the Civil and Mechanical Engineers' Society on the 4th inst. at the rooms of the Iron and Steel Institute, Victoria-street, a paper was read by Mr. Bernard Dyer, F.C.S., on the subject of "Chemical Analysis considered in its Application to Civil and Mechanical Engineering." Mr. R. M. Bancroft, president, occupied the chair.

Mr. Dyer's paper opened with some remarks on the close connexion of chemistry with other sciences, drawing attention to the marked and subtle relations between the chemical composition and physical properties of various kinds of matter. The subject of water analysis was treated at some length, both as regarded the supply of drinking-water and the suitability of various waters for boiler use, some practical remarks being introduced on the occurrence and prevention of boiler incrustation. The subject of oils and other lubricants, with reference to their adulteration with drying oils and the consequent damage to machinery, having been alluded to, the paper was brought to a close with a reference to sewage-purification, agricultural chemistry as affected by engineering, and gas.

A discussion followed, in the course of which it was suggested that chemistry might be applied with advantage to the art of building, in order that edifices might no longer be constructed in London of stone which crumbled under atmospheric influences. General agreement was expressed that the analysis of samples of material was very important, as tending to ensure greater uniformity of quality in manufactured articles used in engineering, and supplied by contract; though with regard to steel rails it was pointed out that there was great difficulty in obtaining anything like a uniform quality of product, the same bar often furnishing different results if analyses were made of two or more parts of it.

Mr. Dyer replied, observing that he did not think chemical analysis could be expected to throw much light on the nature of wood with regard to building, or in all cases on the durability of stone. He thought microscopic examination of the first-named material might possibly be found useful if carefully studied; and, as to stone, the softest chalk and the hardest marble, for example, were chemically the same substance.

Baltic Fir Sleepers.—The interpretation put upon the expression, "deals, battens, and other light wood goods," in the new Merchant Shipping Act, by the Board of Trade, as set forth in the secretary's letter to Messrs. R. Wade, Sons, & Co., of Hull, has caused great satisfaction in Germany, inasmuch as it includes fir wood. A great number of fir sleepers are shipped every winter from the Baltic ports to England, and this traffic is, by the above interpretation, allowed to continue.

ST. ALPHEGE'S MISSION COLLEGE, BLACKFRIARS-ROAD.

THE block of buildings on the east side of Blackfriars-road, known as St. Alphege's Mission College,—an institution for training students intended for the Church of England, as well as for giving a middle-class education to the sons of tradesmen and others,—is at present undergoing very extensive alterations, both externally and internally, and being much enlarged. The dingy elevation to Blackfriars-road is being entirely re-faced and ornamented in Portland cement, so as to give it a greatly improved appearance. All the windows have been ornamented with moulded circular heads, enclosing devices symbolical of the various branches of art and science, and education generally, and the elevation is surmounted by a balustrade, in the centre of which is an arch, on the face of which are inscribed the words "Mission College." In the centre of the ground-floor is a porch entrance, projecting across the area in front of the building to the boundary of the footpath. The building has been extended considerably at the north end by an addition to the structure, by which the Blackfriars-road frontage has been lengthened to the extent of about 12 ft. This added portion of the building is carried much higher than the old part of the structure, and terminates with a gable and circular window, surmounting the Blackfriars-road frontage, together with a turret for the chapel and school bells. The lower portions of the new building contain school and class-rooms for the Church students and other pupils, together with dormitories for the boarders, and other apartments, whilst the whole of the upper floor is fitted up as the college chapel, containing about one hundred seats in the body of the apartment, a chancel and altar, with stalls, organ-chamber, vestry, &c. The interior of the old portion of the building has likewise been reconstructed and rearranged for the greater convenience and accommodation of the heads of the college as well as the students, and will contain the wardens' and masters' apartments, library, lecture-rooms, school-rooms, refectory, and dining-rooms, together with dormitories. A large portion of the basement area will be set apart as recreation space. The part fronting Blackfriars-road will be covered in, while that in the rear will be open.

The designs for the enlarged building and alterations have been furnished by the Rev. J. W. Rhodes, who is at present a beneficed clergyman in Staffordshire, but who, until within the last few years, was an architect carrying on business in London. Retiring from the architectural profession, he some time ago became a student at St. Alphege's Mission College, under the Rev. Mr. Goulden, the principal, and having graduated at Oxford, he was subsequently ordained by the Bishop of Lichfield.

The contractor for the works is Mr. Martin.

MASONIC BUILDINGS.

Weymouth.—Mainly through the exertions of Mr. Pelly Hooper, who has been W.M. two years in succession, new buildings for "All Souls'" Lodge, 170, Weymouth, have now been erected. They are in School-street, in the rear of the Hall, and on ground leased for ninety-nine years of Bro. Sir F. W. Johnstone, bart., M.P. for Weymouth. Mr. G. R. Crickmay, P.M., is the architect.

Birmingham.—The portion of the Masonic Hall buildings occupied by the Freemasons for their meetings has just undergone complete renovation and redecoration. The work commenced in reality with the vestibule at the New Street entrance. The walls are painted buff, and in the panels on each side are displayed griffins in gold. Upon a gold ground in the spandrels there are a number of medallions in which are inserted cameo portraits of Handel and Newton, Tasso and Raffaelle; whilst in the ceiling a series of tablets are introduced bearing the names of distinguished authors and musicians. The ceiling of the corridor has been painted in aërial blue, the cornices and belts being in buff and morones, whilst the walls are in what is known as Wedgwood green, the pilasters being in black, with blue belts and gold ornamentations. The whole of these decorations have been executed by Mr. John Taylor, Broad-street. The walls of the banqueting-room have been papered with Mr. Taylor's damaskoid, having a crimson background and amber-coloured decorations. The

pilasters are relieved with Grecian ornamentations, and in the panels have been painted medallions with fruit. The dado has a black-and-gold enrichment and morone belts.

Ashford.—A new Masonic building is about to be erected in Bank-street, Ashford, adjoining the Post-office. It is contemplated to have the ground-floor constructed for two shops; the upper floor will be used as a hall. The contract for the construction has been taken by Mr. Wood, of Ashford, for 1,282*l.*

DETENTION OF PLANS AND SPECIFICATIONS.

SILVESTER *v.* GEE AND OTHERS.

IN this case (heard in the Newcastle County Court on the 19th ult.) the plaintiff was an iron-founder at Newcastle, and the defendants were builders and contractors at Stafford. The action was to recover the sum of 50*l.*, of which 20*l.* were for the alleged detention of certain plans and specifications, and 30*l.* damages alleged to have been sustained by reason of the detention.

It was stated in support of the claim that in the early part of last year the plaintiff wished to erect some houses in Newcastle, and he instructed Mr. Blood to prepare the plans. Two sets of plans (each for three houses) and one specification were prepared. These plans were lent to the defendants' foreman to enable him to send a tender; but his employers stated that they were too busy, and they refused to allow him to tender. He consequently returned the old plans. Afterwards the plaintiff wanted to erect seven houses instead of six, and not being satisfied with the old plans, he instructed Messrs. Beardmore to prepare new ones. They accordingly prepared two sets of plans, and one complete specification, which were the object of the present action. These plans were sent to the defendants in March, and had not been returned. The defendants' foreman had asked to be allowed to look at the old plans, stating that he could not remember the difference between the old and the new ones. The plaintiff lent the old plans, but the defendants had not sent any tender for the erection of the houses, so the plaintiff fetched the old plans back, and pressed for the return of the new plans. A reply was received to the effect that the plans had been sent back to the plaintiff's works.

For the defence it was stated that the plans had been returned. The defendants could have had no motive in keeping them back; and if they had been lost, the defendants were not liable if there had been ordinary care used.

Three witnesses were called for the defence, one of whom spoke to having taken the plans back to Mr. Silvester's works, but he could not afterwards recognise the man with whom he had left them.

Mr. Smith, who appeared for the plaintiff, in replying to the defendants' case, said that Mr. Gee was a highly respectable tradesman, and the reasonable assumption was that without his knowledge the plans had been lost by one of his servants.

The jury, after consulting together for about two hours, returned a verdict for the plaintiff for 10*l.*; each party to pay his own costs.

CASES UNDER THE METROPOLITAN BUILDING ACT.

TIME FOR TAKING PROCEEDINGS.

AT Wandsworth Police Court Mr. H. Bishop appeared to answer a summons at the instance of Mr. Field, district surveyor of Putney, for constructing two balconies in Cambridge-road not of fireproof materials.

The defendant complained of the surveyor not interfering at the time he built the balconies, which was in June last. He had since sold the property.

The complainant said he did not discover them until October.

Mr. Paget thought the Police Act applied in this case, directing proceedings to be taken within six months from the time the offence was committed. The offence was committed at the time the balconies were erected.

The complainant submitted that the offence was committed at the time the notice was disobeyed. If not, the surveyor would have no control over buildings not discovered in time.

Mr. Paget said the surveyor must look sharp to find them out. He told the defendant that he ought to have given notice, but as more than six months had expired he had no power to deal with the summons, which he dismissed.

This decision appears to us entirely erroneous. Clause cv. provides "that the time during which the District Surveyor may take any proceeding, or do anything authorised or required by this Act to be done by him, in respect of such building or work, shall begin to run from *the date of his discovering* that such building has been erected or work done."

The Theatres in Dublin.—The Dublin Chief Commissioner of Police, Sir Henry Lake, has ordered a survey to be made of the theatres of the city to ascertain what are the means of exit in case of fire.

MONUMENTAL.

New York.—A colossal bronze bust of Mr. Horace Greeley, which has been erected as a monument over his grave in Greenwood Cemetery, New York, mainly by the working printers of the United States, was unveiled on the 4th ult. It is a bronze bust, 4 ft. in height, resting upon a granite pedestal 10 ft. high. Upon one side of the pedestal is a tablet, of bronze, on which Mr. Greeley is represented as a compositor, standing employed at the case, and upon a slip at his side is a paper bearing the date, "New York, 1831." Upon two other sides are, also in bronze, a plough, a pen, and a scroll, the fourth side containing a bronze tablet with the following inscription:—"Horace Greeley, born February 3, 1811; died November 9, 1872. Founder of the *New York Tribune*." The monument is the work Mr. Calverley, an American sculptor. The subscriptions for the memorial amounted to 6,000 dols., which is a little more than the cost of the monument.

Glenelg.—A polished granite obelisk has just been erected in the churchyard of Glenelg by the parishioners of Glenelg, Kintail, and Glenshiel, and some other friends, in memory of the late Rev. Mr. Macrae, for thirty-years minister of Glenelg. The obelisk was furnished by Mr. Legge, Aberdeen.

HOSPITALS.

Hunstanton.—It has been decided to build a new convalescent hospital at Hunstanton. Plans were obtained in competition, thirty-six sets being submitted by architects from all parts of the United Kingdom. Mr. R. Hutchinson, architect, Huntingdon, was among the number, and his drawings were accepted.

Sheffield.—At a recent meeting of the Health Committee of the Sheffield Town Council, the subject of the proposed fever hospital in Winter-street came up for discussion, and a ground-plan of the Institution was laid before the members. The plan has been prepared by Mr. Stovin, of the borough surveyor's office. According to this plan, the building will have a frontage to Marples-road of 120 ft., and a wide corridor will run the whole length of the hospital, by which thorough ventilation will be insured. On the ground-floor there will be accommodation for twenty-eight beds, with rooms for convalescents and other purposes, surgery, reception-room, laundry, and so forth. The story above is almost an exact counterpart of the floor below, and it gives accommodation to a similar number of beds. There is a mortuary to the right of the building, and in a quadrangle at the rear of the main building there is a disinfecting-house.

Ratcliff.—New buildings for the East London Hospital for Sick Children have lately been erected. The building is of solid construction, no money having been expended upon unnecessary ornamentation. When finished, the institution will contain 136 beds; but in its present state it is adequate for ninety beds, including ten for infectious diseases. The wards are spacious and lofty. For the construction of a third block, 5,000*l.* are required, and to furnish the establishment in a proper manner a further sum of from 1,500*l.* to 2,000*l.* It is intended that there shall be an opening ceremony in the ensuing Spring. The building was erected by the late Mr. Thomas Ennor, the architects being Messrs. H. S. & C. A. Legg.

Evesham.—It has been resolved to establish a cottage hospital at Evesham. It is proposed that the hospital shall have twelve beds, and the building, site, and furniture will probably cost 1,500*l.*

NEW BRIDGES.

Coatbridge.—The new bridge over the canal at Coatbridge, which completes the series of improvements which have been made during the last few years at the site of the old level-crossing, and on which upwards of 60,000*l.* have been expended, has been formally opened by Mr. W. Weir. Mr. Kay was the contractor. Mr. Weir congratulated the inhabitants of Coatbridge on the completion of this undertaking, which it had taken years to complete, and by means of which the great centre of the Scotch iron trade had become possessed of a safe means of transit for all their produce. The level-crossing had been abolished, a splendid railway bridge had been carried over the roadway, a commodious towing-path had been carried through beneath, and a substantial bridge had now been completed for the road traffic. Some idea of the traffic passing over this great centre may be obtained from the fact that the Caledonian and North British Railway carry more than 150,000 tons per day over lines running parallel to each other, while on the road and canal carts and boats are continually seen heavily laden.

Dundee.—On the 26th ult. the last of the large caissons for supporting the 245-ft. girders of the Tay Bridge of the North British Railway was floated out and successfully lowered into its place. The pier, which is if anything the highest, and consequently the heaviest connected with the bridge, is 31 ft. in diameter, or nearly 100 ft. in circumference, 44 ft. in height, has a bottom area of 700 square feet, and is about 200 tons in weight. The lower part, which is about 20 ft. in height, is built round with bricks to a thickness of 14 in., while there is as yet nothing inside of the iron covering of the upper part. After the pier has been sunk to the depth of about 20 ft. into the bed of the river, the upper part, which is 24 ft. high, is filled up, and the covering of iron removed. Regarding the completion of the undertaking, there are now forty-seven piers completed from the north side, three of them being 31 ft. in diameter. Then follows the centre gap, the last pier of which has just been deposited, as stated above, and in which six large girders have yet to be placed. From the south side there are fifteen piers finished. After the last of these is the south gap, in which have yet to be placed seven girders of 145 ft.; and, as the whole of the piers are in an advanced stage of completion, this gap will in a short time be filled up. Piers 22 to 26 have been finished, and the girder from pier 26 to pier 27 will be raised as soon as the latter has reached its proper height, which will be this week. Then there are other two piers completed, while a third is nearly finished. It is confidently anticipated that, unless very bad weather should occur to prevent the completion of the work, a train will run across the bridge on the 1st of September next. Messrs. Hopkins, Gilkes, & Co. are the contractors.

VERDICT AGAINST A BUILDER.

AN inquest has been held at the Waterloo Hotel, near Wellington College Station, Sandhurst, Berkshire, touching the death of Ada Barnes, the infant daughter of William Barnes, butler at Wellington College, whose death was caused by the falling of a part of the house in which the parents resided. It transpired that Barnes, in the month of May last, made an agreement with Mr. Blandford, of Bridge House, Sandhurst, to build him a house for 245*l.* 10*s.* The plan and specifications were prepared by Blandford and approved by Barnes; but the latter knew nothing of building, and left everything to Blandford. The family entered into the occupation of the house on the 1st of December. The part of the building that fell in consisted of a bedroom and parlour over a cellar. As suggested by Mr. Blandford the hollow walls were alleged to be preferable to 9-in. walls. The remainder of the house was standing. At the time of going into the house there was 1 ft. of water in the cellar, and it afterwards increased to 3 ft. Three of the four walls were built of concrete up to the surface of the ground. The builder, on being examined, stated that he could form no other opinion than that the water was the cause of the falling in of the building.

Mr. Wheeler, solicitor, of Wokingham, appeared for Barnes, and called Mr. Joseph Morris, architect, of Reading, who stated that he had examined the building. The cellar walls, he said, were built of lime-concrete. The material was improper for the purpose, and appeared to be of improper quality. The mortar of the brick-work of the superstructure of the house was of indifferent quality. These two facts, in his opinion, accounted for the catastrophe. He considered that the collapse occurred from the unequal pressure of the brick-work upon the soft concrete wall, which bulged and gave way, causing the house to fall very suddenly. Blandford stated that the cellar of his own house was built of concrete, which he considered to be of an inferior quality; but the way in which the house was built was somewhat different.

The jury deliberated some time, and then returned a verdict to the effect that the death of the child had been caused through the neglect and improper way in which Blandford had built the house. The verdict was taken as one of "Manslaughter" against Blandford, and the Coroner made out a warrant for his committal for trial at the next assizes for Berkshire.

A Dangerous Material.—Within three years, says the *Commercial Bulletin*, there have been three shops destroyed in Massachusetts through lampblack. A hand damp with perspiration, a drop of water, a bit of grease, or a sprinkle of oil, will create combustion which will start the lampblack aglow like charcoal, and so ignite the package, and hence the blaze. In lampblack factories, while great precaution is taken to prevent fires, a rainy or sharp frosty day will start a dampness upon the inside of a window-pane, and the flying particles of dust lighting upon this, create a spark, which, communicating with the pile, may send a glow of fire with wonderful rapidity through the galleries of the shop.

KENSINGTON—THE PALACE AND ROADS.

IT is some years since allusion was made in the *Builder* to the deficiency of open thoroughfares leading north from this royal and important town to Notting-hill, on the Bayswater line, which is the second if not equal grand Western Boulevard, and is equally in default of any free route of commercial intercourse for a mile and a half between Park-lane and Church-street. It was then suggested that the large open piece of common, of about six acres, lying between the old Palace front and the splendid Palace-garden private thoroughfare, should be cleared of old and useless barracks and cottages; and together with about thirty acres of outlying meadows extending to the Bayswater-road on the north, and to Kensington Gardens on the east, all should be thrown into a park and surrounded by an iron railing, which would secure to the old Palace the suitable aspect of a royal structure interned in woodlands.

The erection of a new palace suitable to the requirements of royalty, and more in accordance with the style and taste of the day, was then recommended to be placed farther east in the gardens, near the Round Pond, where the long vista-ranges all terminate, and which would seem to have been the spot intended by London for the site of a palace on the laying out of the first plantations.

No longer the abode of the sovereign, the building is dedicated to the use of members and friends of the reigning family; and there is no haste required in the demolition of the old structure until a complete and perfect palace should be erected, either further east on the grounds of the present private enclosure, or about 120 yards still farther east, and nearer to the Round Pond.

Such a change would add about 40 acres to the gardens, and give an extended circuit of over half a mile, in a continuous border drive, adorned by plantations and a continuous iron railing.

Such an alteration would admit of a direct road, external to the iron railing, leading from Kensington to Bayswater, and issuing out nearly opposite St. Petersburg-place, by the present outlet, and would confer upon the dense and increasing population of both Kensington and Notting-hill inestimable advantages.

At present there is a narrow, tortuous, and hilly road by Church-lane, through paltry business-streets, to Notting-hill; but as the Palace-garden private road has but a very slight gradient of ascent, the line here recommended would present a hardly perceptible elevation.

Within the last three years the old gardener's house has been abated, as before recommended, the heavy red-brick wall removed, and iron railing substituted on the street-line; yet, still, the more ancient, uncouth, and rugged brick fence aligneates with the old palace-front, from the high-road, the whole extent of the façade, which is built over, and impends upon it. The foreground, or common, alluded to is a waste. The small guard-barracks and cottage (of Sir Heneage Finch, in the reign of William III.) all betoken symptoms of decay, needing the artistic faculties of our time to renew a structure which, as it occupies the finest position of London, ought to be in accordance with the tastes and habitudes of the present generation. QUONDAM.

GOODMAN'S FIELDS THEATRE.

SIR,—In your interesting account of the Goodman's Fields Playhouse, given in the *Builder* of December 23rd last, there seems to be some slight confusion, which, perhaps, it might be as well to have cleared up.

From your account it would be inferred that the "Goodman's Fields Theatre" and the "Royalty" were one and the same; but it is well known that they were entirely distinct buildings, and you will see illustrations of both, taken from old drawings, in Wilkinson's "Theatrum Illustrata," published in 1813. The former was situated in Great Alie-street, adjoining the still-existing "Zoar Chapel," and having the burial-ground at the rear; and although it might have overshadowed, I do not see how it could have covered, the "graves of the pious," unless the owners of the chapel had sold or let part of their burial-ground for building purposes; at any rate, the curses which it was suggested might have had something to do with the disasters which afterwards occurred appear to have fallen more severely upon the "Royalty," although it was not the one intended. The Goodman's Fields Theatre, in Great Alie-street, being the place where Garrick performed, does not seem to have been more unfortunate than most other theatres, almost all having been burnt down at some period of their existence. I believe some remains of it were seen when the sugar-refinery, in which it became incorporated, was pulled down, some years since. The site is now covered with new warehouses.

The Royalty Theatre, the first stone of which was laid by Mr. John Palmer, on December 6th, 1785, nearly seven years after the death of Garrick, was situated in Wells-street, near Wellclose-square, the site being now included in the Sailors' Home. It was this house which was afterwards rebuilt, and called the Royal Brunswick Theatre, which came to such an untimely end, through the falling of the iron roof, in consequence of which catastrophe the architect was obliged to emigrate to America, where he died a few years ago. There is also a quotation in your paper, referring to a theatre in "the passage by the Ship Tavern, between Prescot-street and Chambers-street." This, if it existed at all, would be a third theatre in the same locality; but I am not aware of any other mention of it, and conclude that it must be an error in the description, and that the Royalty was the one referred to.

One word as to the marriage of Garrick. It is rather singular that, if you turn to the *Gentleman's Magazine* for the year 1749, you will find that the marriage is announced first on May 25th, and again on June 22nd, the latter announcement being, "David Garrick, esq. (not before) to Mademoiselle Eva Maria Violette, 10,000*l*." In the same magazine are some satirical verses, of not a very refined character, upon the same subject. W. A. L.

BIG GUNS.

"Shiver my plates! where are we now?"

SIR,—Having read of the capabilities of the 80-ton gun, "I put on my thinking-cap." The targets were made to represent the two sides of an iron ship, the first shot made a clean thoroughfare of each.

It behoves the Admiralty to look out for the safety of our iron fleet. Other nations are in possession of 100-tonners; another Power is making a coil-gun of 250 tons!

Now, in the event of our ships being hulled by these monster guns, what ready means have we to stop gaps? None! The *Vanguard* was over one hour foundering. Had a mainsail been drawn under her and tightened by the capstan or the winch, she would have been afloat now.

This could be used in action to stanch shot-holes; a turn of the capstan would shift the canvas, and cover gaps on both sides at once.

By all means let us guard our navy, and prevent our rear-guard from joining the *Vanguard*, thereby gaining and retaining the regard of the blue guards of our land. R. T.

HAMBLEDON CHURCH.

SIR,—In your notice of the re-opening of this interesting church, in your issue of the 16th of December, it is stated that,—"The chancel was restored by the Ecclesiastical Commissioners, under their architect, Mr. E. Christian, and the rest of the church at the expense of the parishioners, from the plans of Mr. James Foster, of Southampton." I do not know whether there is an architect of this name in Southampton, but I beg to say that the works were designed by me, and carried out under my direction, by Messrs. Cornish & Gaymer, of North Walsham. JAS. FOWLER.
Louth.

BARNSTAPLE.

NEW premises for Mr. Vicary, fishmonger and game-dealer, have just been completed in the neighbourhood of the North-walk, Barnstaple. The site is one of the best corners of the town; the borough surveyor, Mr. Richard D. Gould, is the architect of the new buildings. The style of the edifice may be said to belong to the late French school of architecture. The building, which is of buff Bridgwater bricks, with Bath stone and red Mansfield dressings, is carried up to a considerable altitude. The springing of the roof is carried by a bold cornice. This is of concrete, as also are the window-sills. The windows on the lower floor have elliptical heads, terminating with carved finials and other enrichments. The general fittings within and without are of pitch pine. The revolving wood shutters are by Messrs. Clark & Co., of London. Polished Sicilian marble slabs are introduced in the windows and as counters. The works have been carried out by Mr. John Davey, who has been entrusted with the contract for the new building for the feoffees of the Long Bridge, under the same architects. The carved and ornamental parts of the stonework are the handiwork of Mr. Harry Hems and his assistants.

MASTERS AND MEN.

Durham.—At a recent meeting of the operative masons, held at Claypath, Durham, it was decided to ask the masters for an advance of wages. In accordance with that decision notice has been given to the masters of the men's intention to apply at the proper time to alter the rules as far as regards the rate of wages. Being considerably below other towns around them, they desire to be on equal terms with them, therefore ask an advance of 4*s.* per week on the present rate, for the summer and winter respectively.

A Costly Strike.—A review of the South Yorkshire coal trade for 1876, published by the *Sheffield Telegraph*, estimates the loss to the miners by their strike at the commencement of the year at 250,000*l*., and to the railway companies, through reduced carriage of coal, at 120,000*l*. 12,200 men were on strike. The reduced trade in the months of May and June is illustrated by the fact that in February one firm sent 4,200 tons of Silkstone to London on one line of rails, and in May only 8 tons; another firm in February forwarded 9,300 tons, in May only 67 tons. It is satisfactory to be assured that the recent opening up of new collieries will next year increase the coal-producing power of the district by at least 2,000,000 tons.

Swansea. — Another misunderstanding has taken place between the master and operative masons of Swansea. From the information which the *Cambrian* has been enabled to glean, some 200 masons struck work on the 1st inst., without having given the masters the usual notice that such would be the case, or sent a deputation to discuss the matters in dispute. It appears that several months since the masons gave the employers notice to the effect that in the approaching summer months they should demand an increase of wage of 6d. per day, to which the masters replied that, so far from being in a position to give what was demanded, they should require a reduction of 6d. per day upon the current rate. A short time after, however, the men met the employers, and said that the notice of an advance was a mistake, and begged to withdraw it. The masters thereupon submitted a new code of rules, which contained several matters of minor trade questions; the principal affecting the men was the proposition that the hour system of payment should be adopted,—that the payment should be 7d. per hour, of 54 hours in the summer and 48 hours in the winter. The proposition, however, was peremptorily refused by the men.

AUSTRALIA A CUSTOMER FOR CANADIAN TIMBER.

A CORRESPONDENT writes from Canada to the *Timber Trades Journal* as follows:—"There is a circumstance connected with the Centennial Exhibition that may result in some benefit to the timber trade of Canada. The Australian Commissioners on duty at Philadelphia were so struck with the excellence and cheapness of several Canadian manufactures that they expressed the utmost confidence in the possibility of establishing a direct trade between the sister colonies. One of the Commissioners visited the principal cities in the dominion, and insisted strongly on the advisability of sending samples of several articles manufactured here to the Australian Exhibition, which is to be opened at Sydney in April, 1877. The Boards of Trade representing the leading commercial centres sent delegates to Ottawa to learn how far the Dominion Government would assist in such an enterprise, and the latter, with a readiness which does them credit, stated their willingness to pay the carriage of exhibits to Australia, and to send three commissioners thither, in order to study the commercial position of that country, and to fully report thereon. A vessel has been chartered, and will sail from Montreal in the course of a few days. Several lumber manufacturers will send specimens of their goods; but, what is of better augury, the same vessel will carry some sawn lumber that has been purchased here by

an Australian contractor, Mr. Nation, from the Hon. J. Skead, say 70,000 ft. board measure, and 20,000 laths. This is a mere sample order, but a contract has been entered into between the same parties for 1,500,000 ft. per year for three years. Messrs. T. W. Currier & Co. have also sold a number of doors, which will be shipped by the same vessel."

STAINED GLASS.

Burslem.—One of the three-light windows in the north side of St. Paul's Church, Dalehill, Burslem, has just been filled with stained glass in memory of the late Mrs. James Edwards. The centre subject is St. Paul brought before Agrippa, the one on the left hand is Paul and Silas in Prison; that on the right hand the Baptism of the Jailor. The window, as well as the three others on the north side, are from the works of Mr. W. H. Constable, Cambridge.

Bedford.—A stained-glass window has been put up over the altar in the Roman Catholic Church, Bedford. It is from the studio of Messrs. Campbell & Smith, Southampton-row. In the head of the window is the Holy Child Jesus, stretching out his arms in welcome, but seated on the throne, surrounded by the rainbow, as seen by John in his vision described in the Revelation. Below, under rich canopy work, are four scenes from the sacred childhood,—the nativity, the presentation in the arms of Simeon, the flight into Egypt, and the finding in the Temple amongst the doctors.

Kilsby.—Kilsby Church has just received an addition in the shape of a new east window of stained glass, the work of Messrs. Holland & Holt, of Warwick. The centre light represents the Crucifixion of Our Lord, while on the one side is His baptism, and on the other an angel saying to the women, "He is not here, He is risen," as he points to the empty tomb.

Tewkesbury.—A stained-glass window has just been placed in the south side of Bushley Church. The window represents "The Resurrection," and is erected in memory of the two brothers of Captain John Mundy Dowdeswell, of Pull Court, viz., Henry J. Dowdeswell, who died November 1, 1874, and Lieut. George E. Dowdeswell, who died in Dublin, January 28th, 1876. The design was executed by Messrs. Hardman, Birmingham.

Edinburgh.—In St. Giles's Cathedral the first of a series of windows commemorative of the ancient trades and craftsmen of Edinburgh has been inserted in the clearstory of St. Giles's Cathedral, in accordance with the general plan approved of by the Stained Windows Committee. This window is the gift of the Incorporation of St. Mary's Chapel. Shields of the wrights and masons are placed in the two main compartments upon a background of light glass delicately outlined in canopy and diaper work of the fifteenth century style. The designing and execution of the work are by Messrs. Ballantine & Son.

Norwood.—A stained glass window has just been erected in All Saints' Church, Upper Norwood, to the memory of Mr. and Mrs. John Dixon. It is a three-light window representing the "Journey of the Kings," the "Adoration," and the "Flight into Egypt," and is from the studio of Messrs. Mayer & Co., of Munich.

SCHOOL-BUILDING NEWS.

Doncaster.—Plans and elevations have been gratuitously prepared by Mr. J. G. Walker for the alteration and enlargement of the British schools, Doncaster, providing extra accommodation for 420 children. By these plans the present building is intended to be carried forward to Wood-street, and next in direction of the Horse-fair, on land recently purchased. The front of the school, which will then be in Wood-street, will present a Gothic elevation, 90 ft. in length, with an entrance at each end for the scholars.

Bradford.—New national schools in connexion with St. Michael's Church, City-road, Bradford, have recently been opened. The schools were originally arranged in two departments, and consisted of a large mixed school-room for boys and girls, the usual class-rooms, and a separate room for infants. Increased accommodation has been provided by the erection of a new infants' school and two class-rooms at the west end of the old schools, leaving the former infants' school for the use of the older scholars. The new infants' school-room is 54 ft. long, 35 ft. 6 in. broad, and 21 ft. in height, ceiled at the level of the collar-beam, and provided with a gallery at the north end. The two class-rooms are each 12 ft. 6 in. by 17 ft. Advantage has been taken of the fall of the ground to secure a large and well-lighted store-room, as well as a heating-vault, in the basement. The warming is effected by means of a hot-air apparatus supplied by Messrs. Barrett & Leggott. The accommodation provided is for 225 children, at a cost of 1,200*l*. The contractors were Messrs. B. & S. Robertshaw, masons; Mr. W. Brunton, joiner; Mr. R. Abbott, plumber; Mr. A. B. Ackroyd, plasterer; Messrs. James Thompson & Son, slaters; and Mr. McGuire, painter. The buildings were erected under the superintendence of Mr. John Tyas, from designs by Messrs. T. H. and F. Healey, architects.

Tunbridge Wells.—A new Sabbath school, in connexion with the Congregational Church, Albion-road, Tunbridge Wells, has recently been opened. The building is constructed in the Gothic style, with Kentish ragstone and Bath dressings, and comprises a large school-room, capable of accommodating about 150 children. Besides this accommodation there are two other rooms, so constructed that by opening folding doors these rooms form an addition and in fact part of the large school, by which it will accommodate about 220 children. Messrs. Weeks & Hughes have been the architects, and the works were executed by Mr. Perigoe, builder and contractor, Tunbridge Wells.

Newcastle (Staffordshire).—The new buildings for the girls' endowed school in Stubbs-walk are so far nearly completed. The buildings contain, on the ground-floor, schoolroom, 40 ft. by 22 ft.; three separate class-rooms, each 20 ft. by 15 ft., communicating with the principal entrance and large school by means of a corridor, 5 ft. wide; lavatory and cloak-room, 51 ft. by 8 ft.; waiting and book rooms, and the usual out-offices. A drawing-school, 21 ft. by 20 ft., with model-room attached, and approached by a staircase direct from the principal entrance, is formed over one of the class-rooms and a portion of the corridor. Advantage has been taken of a rapid fall in the ground to form a covered playground or gymnasium under the schoolroom. The expenditure being limited, the architects have adopted the Early English style of architecture, treated in a plain manner, with the object of obtaining, with simple materials, a substantial rather than an elaborate and slightly-constructed building. The walls are of brickwork, faced externally with pressed red bricks set in black mortar; the windows to the school are of stone throughout, with plain arched heads, and mullions and transoms, the upper gable of the schoolroom being filled in with plain tracery. The works are being carried out by Messrs. Inskip Brothers, builders, of Longton, under the immediate superintendence of the architects, Messrs. Chapman & Snape, of Newcastle.

Innerleithen.—At the west end of the High-street of Innerleithen, a large schoolroom has, in accordance with the will of the late Lady Louisa Stuart, of Traquair, been built for the children of the Roman Catholic inhabitants. The mason work has been executed by Mr. Robert Mathison, and is of whinstone, faced with freestone. The woodwork has been executed by Mr. John Forsyth.

Kingston-on-Thames.—The new boys' school for St. John's parish was opened on the 3rd inst. It consists of a school-room, 40 ft. by 20 ft., and a class-room, 18 ft. by 14 ft., with an entrance-lobby and a lavatory, and the necessary out-buildings, and provides accommodation for 124 boys. Local stock bricks, with red-brick dressings, have been used for the walls, the roof being tiled. The cost was 670*l*. Mr. A. J. Style was the architect, and Mr. S. Mason, of Kingston, was the builder.

CHURCH-BUILDING NEWS.

Mortlach.—Mortlach parish church, Banffshire, was opened on the 12th ult., after restoration. The church dates from the twelfth century, and its plan is that of the letter T reversed, thus ⊥, the horizontal portion of the letter representing the main section, or nave, of the building, and the upright portion the north transept. The examination of the main section of the church shows that a part of the walls, above 4 ft. thick, are composed of small round stones, such as may be found on the margin of the Dullan, embedded in mortar, on the same principle as a modern concrete wall. At a point 18 ft. from the west end of the main section, the walls were found to have been extended westward. In 1826 the church was modernised by an addition made to it. That addition was at the north aisle. Probably at the same time the galleries were added; and the churchyard was certainly then extended on the north and west. No later alteration has been made upon the building till the present time; and the only change in the outward form now is an addition of 10 ft. to the north wing. The greatest change has been effected in the end of the nave. The old gallery has been removed, and the features of the wall, against which the altar stood in pre-Reformation times, have been brought into prominence. In renovating this part of the church, several new features were disclosed. Two lancet windows were underneath the gallery in the east gable wall; and a small square window above the gallery. On removing the plaster from the wall it was found that the square window had been formed by closing up the bottom and top of an old lancet window. The architect has restored the window to its ancient form, and the gable wall has now the three lancet lights. Mr. A. Marshall Mackenzie, architect, Elgin, has designed and supervised the works. Mr. George Shiach, Dufftown, was contractor for the mason work; Mr. Donald Mackay, Dufftown, was carpenter; and Mr. Charles Gordon, Dufftown, plasterer. The slater and painter work was contracted for by Keith tradesmen,—the former by Mr. John Taylor, and the latter by Mr. C. Anderson. The cost of renovation will be fully 1,400*l*.

Woodditton.—The foundation-stone of the Manners Memorial Church at Saxon-street, a hamlet of the parish of Woodditton, was recently laid by Lady Adeliza Manners, in memory of her deceased husband, the late Lord George Manners. The cost of the building, estimated at about 1,000*l*., will be borne by Lady Adeliza herself. The plans have been prepared by Mr. J. D. Sedding, of London, and the work of carrying them out has been entrusted to Mr. Robert Tooley, of Bury St. Edmund's. The church will be erected of red brick, relieved with bands of blue and grey; the headings and cills of the windows, the buttress-slopes, and the plinth, will be of stone from the Little Casterton Quarry. The building will consist simply of nave and chancel, the external measurement of the former being 45 ft. by 25 ft., and of the latter 22 ft. by 13 ft. There will be two three-light windows on either side, with brick mullions, and between them a lancet-window. The east window also consists of three lights, with brick mullions, and at the opposite end of the church there will be a rose-window divided into six cusped segments. The interior walls will be plastered, but the brickwork of the chancel and of the arches above the windows will be left exposed. The roof will be of open timber work, covered with slates. The general style adopted is that of the fourteenth century.

Wrecclesham.—Wrecclesham parish church was re-opened by the Bishop of Winchester on the 28th ult., after restoration and enlargement. The church is quite modern, having been erected in 1840, and as built it consisted only of a nave and chancel, to which a south aisle was added some twenty years later; but now a north aisle, in addition to the elongation of the nave by about 12 ft., has been supplied, the effect of which is to give upwards of one hundred extra seats to the edifice, accommodation being now afforded for about five hundred persons. The roof has been considerably heightened, while the unsightly gallery at the west end, which used to be set apart for the children, has been done away with; a bell-turret has also been added to the outer portion. The new aisle, like the rest of the fabric, is built of stone obtained from the neighbouring quarries at Dippenhall, with Bath stone dressings. Mr. F. C. Birch, of Farnham, was the builder, and Mr. C. H. Howell, of London, was the architect.

West Knoyle.—It is proposed to rebuild the nave and chancel of West Knoyle Church, at a cost of 1,780*l*. The church, according to an appeal lately issued by the rector and churchwardens, is principally of Tudor date. The tower dates from the time of Henry VII. The nave and chancel are a little older, and have some small remains of thirteenth-century work; but the whole edifice has fallen into a melancholy state of disrepair. The walls of the nave and chancel lean outwards, and are only kept from falling by iron ties, from which they seem now to be breaking away. The roof is entirely decayed. "No efficient repair, short of rebuilding the nave and chancel, is possible."

St. Nicholas-at-Wade (Thanet).—The fine old church of St. Nicholas-at-Wade was re-opened

on the 22nd ult., after having been closed for some months, during restoration. The Ecclesiastical Commissioners led the way by good work in the chancel. The parishioners, thus encouraged, undertook the nave and chapels; and, a subscription having been set on foot by the vicar and churchwardens, a plan was agreed to, furnished by the diocesan architect.

Battersea.—The Church of St. Mary, Battersea, built ninety-nine years ago, is about to be renovated and slightly altered in its internal arrangements, according to plans by Mr. Arthur Blomfield, architect. It is proposed to remove the high pews; to remove the doors, which are most inconvenient, and which prevent the free use of the church; to do away with the square pews; and thus to gain an addition of about 100 seats. As to the choir and organ, it is proposed so to arrange the eastward part of the floor as that a platform shall be made with suitable stalls for the choir, and to bring the organ into an adjacent situation on the floor. The vestry has authorised the vicar and churchwardens to apply for a "faculty" for the legal execution of these changes, and a committee has now been formed to collect the funds necessary to carry them out. The estimated cost is about 1,200*l.*

Bengeo (near Hertford).—The parish church of Bengeo (built about twenty years since, from the designs of Mr. Ferrey, F.S.A.) has lately had a lofty organ-chamber added to it, under the superintendance of the same architect. This has been done as a memorial of the late much-respected rector, the Rev. Charles Deedes, from funds contributed by the parishioners. It is placed in the angle formed by the east end of the north aisle and the north side of the chancel. Arches, with chamferred orders, open out into the chancel and aisle. The traceried windows disturbed by this work have been refixed in the new organ-chamber, the size of which is about 13 ft. square, and the height up to the plate 16 ft. 3 in., the roof being boarded at the collar-level. A large organ, with ornamental front, is being built by Messrs. Walker & Son, this being also a memorial to Mr. Deedes. Messrs. G. Ekins & Son, of Hertford, were the builders of the organ-chamber, which has cost about 300*l.*

Baunton.—St. Christopher's Church, Baunton, has been re-opened, after restoration. A local paper states that professional opinion having been taken upon the extent of the work required, Mr. Edward Trinder, steward to the Abbey estate, prepared the necessary plans, and the carrying out of the work was then entrusted to Mr. Edward Webb, under-steward to Mr. Master. Under Mr. Webb's supervision the work has been performed in a great measure by the workmen on the Abbey estate, assisted by Mr. W. H. Wood, who constructed the new seats, and Messrs. Saunders & Sons, who supplied the door for the principal entrance. An entirely new roof has been added, and the old small lead lights in the chancel have been replaced by mullioned windows. A new vestry, opening from the north side of the chancel, has been built, and the old stone floor has been replaced by encaustic tiles. In taking the plaster from the north wall of the nave, a large fresco painting of St. Christopher crossing the stream was seen. The church is heated by a hot-air apparatus by Messrs. Haden & Son, of Trowbridge.

Bordesley.—St. Andrew's Church, Bordesley, was re-opened on the 24th ult., after restoration. The stone of which the edifice was built is very soft and of inferior quality, and gave the church a dilapidated appearance. Shortly after the present vicar (the Rev. J. Williamson) entered upon the charge of the parish in May last, Mr. G. Thomason, architect, was called in, and reported on the state of the building. He estimated that over 1,000*l.* was required to put the structure in decent repair. The mullions, tracery work, lead and glass of windows had to be made new; spouts, gutters, and other external necessaries had to be provided; joists under floors, destroyed by rot, had to be replaced; a new warming apparatus provided; and the church cleaned, coloured, and painted throughout.

Haddenham.—The parish church of Haddenham, which occupies the highest point in the Isle of Ely, is in course of restoration, and the nave and transept have been re-opened for divine service. The work of restoration was commenced in 1872. The church—a large and ancient structure—had become very dilapidated. The north aisle was too dangerous to be used for divine service at all. For some years barriers had been fixed to prevent the congregation using any seats in it, lest the roof (which was shored up with timber) should fall on their heads; whilst the walls, buttresses, and transepts in every part were decayed and ruinous. The lead covering the nave, transepts, and porch was so worn and indented that the water came in freely in many places. The timbers of the long nave roof were in a very bad condition. The fine Early English tower was seriously cracked and damaged. The Ecclesiastical Commissioners undertook to complete the restoration of the chancel, on condition that efforts were made to restore the rest of the sacred edifice. The subscriptions obtained in 1872 for this work amounted to about 2,000*l.*, including 300*l.* from the late Earl of Hardwicke as chief landowner, and 255*l.* from the Archdeacon of Ely. A first contract was then entered into for the nave and north aisle, which seemed to demand earliest attention. Unfortunately, as the work proceeded, the tower gave alarming proof of settlement, and had to be taken down. It has now, however, been carefully rebuilt with good foundations, and preserving its chief features and grand proportions, by the friends and tenants of the late Earl of Hardwicke and to his lordship's memory.

Stepney.— Christ Church, Jamaica-street, Stepney, was consecrated on the 3rd instant by the Bishop of London. The church has been erected from the designs of Mr. Ewan Christian, by Messrs. Downs & Co., of Southwark.

Watlington.—The committee of the Watlington Church Restoration Fund have resolved upon adding an organ-chamber and vestry to the church, at a cost of 350*l.* Mr. Martin, of Hereford, who has just completed the restoration of the chancel, will be the contractor.

DISSENTING CHURCH BUILDING NEWS.

Newcastle-on-Tyne.—The foundation stone of a chapel for the Methodist New Connexion has been laid in Newcastle. The building will occupy a site at the corner of Falconar and Camden streets, Shieldfield, and has been designed by Mr. J. J. Lish, architect, Newcastle, in the Gothic style. It will be built throughout of stone, faced with thin-pitched faced blockers from Tow Law quarries, interspersed with bands of Penrith red stone. On plan it will comprise a nave and two side aisles, and ministers' and leaders' vestries. Accommodation will be provided for seating in open benches nearly 900 persons. Galleries will be placed over the side aisles and each end of the nave. All the woodwork will be stained and varnished; and the chapel will be heated by means of hot water. Messrs. White, Sprout, & Gibson, of Blyth and Newbiggin-by-the-Sea, are the contractors. The estimated cost is 4,600*l.*, and the site has cost 600*l.*

Edinburgh.—For several months past operations have been proceeding in the erection of a new Free church, hall, session-house, &c., at Newington. The exterior of the hall, towards St. Andrew's-terrace, is of gable form, and the style adopted throughout is Early Gothic. The leading feature in the elevation is a wheel-window, 7½ ft. in diameter, the tracery of which consists of an inner sexfoil circle with a series of foliated circle segments radiating towards the circumference, the whole being circumscribed with a primary order of mouldings. Tall, narrow, lancet-headed lights flank the wheel-window on either side. The architect is Mr. Hippolyte J. Blanc, whose designs were selected in competition. The church or main building is expected to be proceeded with soon, and is designed to consist of a nave, with two side aisles, and north and south transepts, with handsome tower and spire, about 150 ft. high.

Gateshead.—The four corner-stones of a new mission chapel for the Methodist New Connexion were laid in Sunderland-road, Gateshead, on the 29th ult. The new building will be 61 ft. long and 32 ft. broad. Mr. Gibson Kyle is the architect, and Messrs. Shields & Cruickshanks, Gateshead, are the builders. The cost is estimated at 1,000*l.*

VARIORUM.

——THE *American Architect*, discoursing of the recent deplorable burning of the Brooklyn Theatre, says:—"We believe that the only safeguard against such disasters is in fixing by penal statute a rigid responsibility, so that not only a civil but a criminal action shall lie against those who build places of amusement recklessly; and against their architects, unless these can show that they were absolutely constrained by their clients. It is quite possible that in the Brooklyn case the faulty dispositions and construction were enforced upon the architect; but in spite of his plea of general ignorance, unless he can show that they were forced upon him, he cannot be held guiltless. We know one architect who, having built a theatre, was compelled, against his energetic protests, to let his exit doors swing inward; and another who had arranged for a sprinkler over his stage, only to have it suppressed at the last moment. . . . . The building seems to have been cleverly planned from the manager's point of view, that is,—so as to admit the spectators from the principal street, and to make the most of the seating-room; but very little care was shown for the safety of the audience."

——The *Gentleman's Magazine* will be published in future by Messrs. Chatto & Windus. The January number is a very good one, and includes contributions from Mr. Hepworth Dixon, Mr. Karl Blind, Dr. Hueffer, Mr. Joseph Knight, Dr. Andrew Wilson, the late Walter Thornbury, and others. It also contains the opening chapters of a new novel by Mr. Justin MacCarthy.——The *Leisure Hour*, speaking of the Stone, Bronze, and Iron ages, says:—"The epochs designated the Stone Age, the Bronze Age, and the Iron Age, have no real existence; they are only stages of civilisation, not measures of time. The Stone Age in one part of the world may have been the Bronze Age in another part and the Iron Age in another; and sometimes in the same country they so overlapped as to be of very little chronological value. Amongst the remains of the Swiss lake dwellings at Wauwyl and Moosseedorf some hundreds of stone implements have been found, but no metal. These dwellings would therefore be relegated to the Stone Age; but in Meilen, on the Lake of Zurich, beside the stone implements, there was found a bronze celt, thus bringing the Stone and the Bronze Age together. Besides, at Morges, on the Lake of Geneva, an iron poniard was found with bronze celts, bringing together the Bronze and the Iron Age; and to complete the anachronism, at Nidau, on the Lake of Bienne, there were secured thirty-three axes of stone, twenty-three bronze axes, together with perforated stones, surrounded by a band of iron, iron spear-heads, and pottery; and at Estavayer, on the east bank of the Lake of Neufchâtel, there were two pile dwellings, in one of which there were only stone implements, but at the other, besides stone celts there was found a knife with a bronze handle and an iron blade. If these are facts, and the authorities are given for every statement, what conclusion can we reach but that any measurement of time made by these supposed epochs must necessarily lead to error? The tumuli speak the same language, for in 1822 a perforated stone axe and an iron axe, with other implements, were found in cutting through the tumulus near Clanghton Hall, Lancashire, in which we have together the two extremes, the stone and iron implements; also in a barrow on Ashford Moor was found an iron arrow-head, with implements of flint, and at Moor Low six rude instruments of stone, a bronze lance-head, iron knives, and glass beads."——A classified index to the first twelve volumes of *Science Gossip* (1865–76) is being prepared. This useful periodical well maintains its position.——During the past year every number of the *Garden* has contained a coloured plate of considerable excellence. They are from original drawings by the best flower and fruit painters, of valuable new or rare plants. Each plant chosen for illustration is usually a member of some important family, and the plate is accompanied by an article enumerating and describing all the kinds, and embodying all that is known up to the present day concerning each great family of cultivated plants. Hardy subjects, which may be grown in the open air, and in all classes of gardens, and which are, in consequence, of most interest to the general public, are chiefly selected for illustration. The subscribers to the *Garden* get full value for their money.

Ornamental Zincwork.—Messrs. Holden & Co., of Wood-street, Westminster, have recently completed a large ornamental zinc ceiling for Malta Theatre. It is a very elaborate piece of work, both in design and execution, and shows to what extent their ornamental stamped zincwork can be adapted. If we understand rightly, it is a false ceiling to be suspended from the existing roof, and zinc was adopted for lightness' sake. Messrs. Holden have done their part of the work very well.

THE WOODEN STRUCTURE AT THE VICTORIA STATION.

SIR,—In your issue of the *Builder* of the 6th inst. you gave insertion to an anonymous letter signed "An Owner of House Property in Pimlico," calling "your attention to the enormous wooden structure close to the Grosvenor Hotel, &c." This description is somewhat vague, and as Surveyor of the district, I beg to inform you that no "enormous wooden structure" exists, excepting the booking-offices, waiting-rooms, &c., belonging to the Victoria Station, erected more than ten years since, and "being used for the purposes of the railway," are specially exempted from the operation of the first part of 18 & 19 Vic., c. 122 (the Building Act). I cannot but think the writer of the letter in question might have been a little more straightforward and given the proper designation to the "enormous wooden structure" to which he alludes, and which he must have well known to be the buildings belonging to the Victoria Station.

No district surveyor would permit any wooden building to be erected except under the regulations of the Act, or with the immediate sanction of the Metropolitan Board of Works.

GEORGE LEGG, Surveyor
Of the District of Belgravia and Pimlico.

THE JOINER'S APPRENTICES.

FIRST APPRENTICE.

'Tis a terrible task; I am sore afraid,
Between these boards the dead will be laid.

SECOND APPRENTICE.

O cowardly heart! If strangers die,
No reason, I ween, for us to cry.

FIRST APPRENTICE.

Nay, don't be cross; consider, I pray,
I ne'er made a coffin before to-day!

SECOND APPRENTICE.

Be that as it may, the work must be done,—
'Tis the master's order, ere set of sun.
First cut the boards—and here is good wine
To strengthen that foolish heart of thine;
Then plane the boards as smooth as can be,
And save the shavings that flow so free;
Then in the coffin, all varnish'd and bright,
You must lay the shavings so thin and light;
For these, so soft, are ever the bed
Whereon they are used to lay the dead;
Then screw down the lid, and slowly go
With your joiner-work to the house of woe.

FIRST APPRENTICE.

I cut the boards, and the measure is true
But I tremble with fear, whate'er I do;
I plane the boards so smooth and trim,
But my arm is weak and my eyes are dim;
I join the boards so true and strong,
But my heart is heavy the whole day long;
'Tis a dreadful task; I am sore afraid,
For between the boards the dead will be laid.

[Translated by John G. Saxe, from the German of Filligrath.]

Miscellanea.

Fireproof (?) Theatres.—The terrible fire in Brooklyn Theatre has (according to the London Correspondent of the *Birmingham Gazette*) made Mr. Boucicault, who is now in the United States, press upon the public notice his arrangement for rendering theatres fireproof. An experiment was made at Wallack's Theatre, New York. Two large pieces of scenery were exposed to the nozzle of a large flame about 5 ft. long. The scenery refused to burn, and the only effect was that the portion of canvas exposed to the flame for a long time crumbled away into a black powder, leaving a round hole in the scenery. Mr. Boucicault afterwards explained that the scenes had been saturated with a solution of tungstate of soda for half an hour. After they were dry they had been primed with a solution of silicate of soda. The same solution would also render the woodwork of the theatre practically fireproof. A still more efficient chemical had lately been tried—tungstate of molybdenum. Mr. Boucicault asserted that the whole stock of a theatre might be rendered fireproof for $100 (20*l.*).

The Scott-Monorieff Tramway System.—The pneumatic car commenced running on the 4th inst. between Paisley-road Toll and Govan. Scott-Monorieff has introduced important improvements, both in the storing of the air and in employing it effectively in the present car, and is now making another for the proposed tramway line between Glasgow and Ibrox. The new car is said to perform a journey of eight miles upon the level with one charge of air.

The New Tower Bridge.—The last day for opposing the Parliamentary Bill expired on the 9th inst., and no opposition has been lodged against it. A sum of over 10,000*l.* has been duly deposited in the Court of Chancery, in compliance with the standing orders of both Houses of Parliament. The engineers, Messrs. Lefevre & Co., estimate the cost of the bridge at 250,000*l.*

Milton's House Demolished.—The efforts of Professor Masson, says the *Pall Mall Gazette*, to preserve "the pretty garden house in Petty France," No. 19, York-street, Westminster, have proved unavailing. The house in which Milton resided while he was Latin Secretary under the Commonwealth is in course of demolition. The laths and rafters may still be seen, open to the sky, of the room in which Cromwell must often have discussed with Milton the affairs of State, and that more interesting chamber where the poet saw his

"late espoused saint
Brought to me, like Alcestis, from the grave."

There Milton went blind, and he married his second wife, Catherine Woodcock, and there she died. There he commenced to write "Paradise Lost." In later years the house belonged to Jeremy Bentham, who inserted a slab with this inscription,—

"Here lived Milton,
The Prince of Poets."

William Hazlitt also resided there.

Fall of Houses. — On Saturday last, shortly before twelve o'clock, an accident occurred at Brixton, which, it is feared, will terminate fatally. It appears that a number of new houses are now in course of erection in Ramsey-street, Atlantic-road, Brixton. During the high wind on Saturday morning, whilst a number of labourers and bricklayers were at work on one of the buildings, a party-wall, 25 ft. high, suddenly fell with a crash, carrying the whole structure and the scaffolding with it. The cries of the sufferers soon brought assistance, and a number of men immediately set to work to extricate them. Two of the men were completely buried beneath the falling bricks, mortar, and scaffolding.——Some buildings in Tanter-street, Birmingham, fell down on the 1st inst. The fall of the block referred to seems to have been anticipatory of the wholesale clearance contemplated by the Birmingham Improvement Scheme. A lad was seriously injured by the falling bricks.

Proposed Shropshire Archæological Society.—Endeavours are being made to bring this about. The proposed society would be established on the basis of the Spalding Club, Powys-Land Club, and other well-known societies, and would have for its object the printing, &c., of the historical, ecclesiastical, genealogical, topographical, geological, and literary remains of Shropshire. A provisional committee has been formed.

Science Lectures. — The Council of the Society of Arts have made arrangements for the delivery of six lectures on various scientific subjects, which will take the place of the usual papers and discussions, on six Wednesday evening meetings during the session. The following gentlemen have each consented to deliver one of the lectures:—Sir John Lubbock, bart.; Mr. E. J. Reed, C.B.; Professor W. K. Clifford; Professor Alexander Kennedy; Dr. B. W. Richardson; and Mr. James Baillie Hamilton.

Distemper Brushes.—Messrs. Crowden & Garrod, of Falcon-square, have introduced a distemper brush which seems an improvement upon those formerly used. It is made with a light, yet strong, patent copper band, the bristles being first well cemented into one solid body and riveted, which ought to prevent the bristles from coming out. The handle is well rounded, and is so formed at the top that the bristles cannot come through.

New Mode of Barking Oak.—A prize of 40*l.* has been offered by the Agricultural Society of France for the best method of removing oak bark while the sap is at rest,—a matter of importance to arboriculturists. This prize, it appears, has been awarded to M. Nomaison, who has invented a method of stripping the bark off trees by means of dry and super-heated steam.

London Parks.—It is stated that the parks, gardens, heaths, and commons under the control of the Metropolitan Board of Works comprise an area of 1,004 acres, for which the Board has paid 313,859*l.*, and repaid 66,538*l.* The interest upon the balance unpaid and the cost of maintenance amount to a charge upon the ratepayers of one farthing in the pound.

The Metropolitan Asylums Board have hired a large factory at Limehouse, and have instructed Messrs. A. & C. Harston, architects, to convert the premises into a hospital for small-pox cases. The estimated expenditure is 2,000*l.*, and the buildings are to be ready in two weeks.

Reform in the City.—Mr. George Mitchell was a candidate for the office of Common Councilman, in the ward of Dowgate, and in retiring says, amongst other things,—

"I recommend the immediate destruction or removal of that disgraceful entrance to the metropolis of the world—Temple Bar. It may be said, 'Temple Bar is doomed.' So it may be, and so it has been for many years; but there it is, and there it may be, Heaven knows how long. I recommend the re-paving of the principal thoroughfares of the City with wood—not by and by, but *now*,—so that ladies and gentlemen may ride into the City without endangering their lives, and wholesale horse-slaughter may be banished to Belleisle or Wandsworth. I recommend that a fair opportunity should be given to all competitors for City or metropolitan contracts, so that honest men may have a chance of doing honest work, with a fair field and no favour. I recommend that the Common Council do forthwith take up the question of the alleged corruption in the City guilds, and the frightful robberies or misappropriations of charity property in the City,—crimes that stink in the nostrils of the country. I recommend that the gas and water companies should be overhauled, and their unjust charges prevented; that no *secret rates* be permitted to be made in the City; that any and every civic abuse be exposed, and swept away; that justice be done to the poor, equity to the ratepayers, and righteousness to the people."

Society for the Encouragement of the Fine Arts. — The first *conversazione* of the nineteenth session of the Society for the Encouragement of the Fine Arts was held on the 4th inst. at the galleries of the Society of British Artists, Suffolk-street, Pall-mall East. The company were received by Mr. Edmeston (chairman) and other members of the council.

Casting Pig Iron.—Casting pig iron into sand beds instead of chills or iron moulds is being denounced in South Staffordshire. Most of the new varieties of pigs contain silica (or sand) in a larger proportion than those made of some of the rich clay band stones, and this had greatly increased the impurity arising out of the incrustation of the pig with sand in the process of casting, for it is impossible to eliminate silicon (or the principle of silica or sand) in the blast furnace. The question was some time ago debated by ironmasters of the North of England and men of enlarged experience declared that the cost of casting in chills would not in the long run exceed that of casting in sand, while the former practice would add greatly to the purity of the raw iron. The Mill and Forge Managers' Association of South Staffordshire have now taken up the subject, and leading ironworks managers have expressed themselves very strongly upon the subject, declaring that the time has come when the practice of casting in sand should be abandoned, since the troubles which it occasions thicken, and the saving by the change desired would to the finished iron industry be many thousands yearly.

The Weather in December.—Mr. Glaisher states in the *Gardeners' Chronicle* that the total fall of rain during the month of December was 5·92 inches, and there is no instance back to 1815 when the fall in December was so large as in the last year; the nearest approach was in the year 1868, when it was 5·4 inches. Rain fell on twenty-five days during the month, being thirteen days more than the average number for December.

Electric Clocks in Paris.—For making the four electric timekeepers which the city of Paris intends to erect, fifteen names have already been entered. The competition will close on September 30, 1877, at four in the afternoon. The four clocks finally selected will be bought by the city of Paris at 200*l.* each. Three prizes,—120*l.*, 80*l.*, and 40*l.*,—will be allowed respectively in addition for the three best clocks.

Prehistoric Jewels.—Dr. Schliemann, in a letter addressed from Athens, incidentally alluding to the valuable discoveries made by him at Mycenæ, says:—"The mass of jewels is so great that you can fill with them a large museum. But what makes these jewels particularly precious is that they derive from the mythic heroic age, of which no museum has possessed as yet a single fragment of pottery."

Aberdare Local Board Pipe-laying.—Some time since a contract was taken by Messrs. S. Chandler & Sons, of Newington Causeway, London, for about 15,000 yards of pipe-laying, which was completed in three months. The cost for repairs to roads and joints during the six months has only amounted, we are informed, to 1*l.* 14*s.* 5*d.*

The Jubilee Ball of the Licensed Victuallers' Asylum, which consists of 170 houses, chapel, chaplain's residence, &c., will take place at St. James's Hall on Thursday, the 18th instant.

Mind in Architecture.—An Australian periodical, the *Two Worlds*, commenting, as far away as Victoria, on some recent observations in the *Builder*, says:—"Of necessity, all architectures, in countries which once were covered with forests, must have originated in wood, that being the material of which the earliest buildings were fashioned, on account of the comparative ease in working it; and the stone architecture which was evolved from it in the course of time would necessarily at the outset be based upon the wooden models of the past, and its developments be moulded unconsciously in some sort of accordance with the timber traditions of the race. But, to go to the root of the matter, why is it that we find the same ideas of construction obtaining now that were in vogue in the time of Rome and Greece, and earlier still in Egypt and Asia? Why is it that there is nothing now that was not 'of old time afore'? Why are ideas thus permanent, amid the rise and fall of nations and generations, the building and destruction of cities, the fluctuations of material prosperity, and the transitoriness of material constructions? Simply because *mind*, which consists of ideas such as these, is permanent amid all changing forms; simply because that very mind which built the very earliest structures, and afterwards the Karnac temples and the pyramids of Egypt, and afterwards the Grecian fanes, and then the Roman monuments, and later on the Mediæval architecture, is the very identical mind which now, in other flesh, is building slavish copies of the ancient forms, and investigating and systematising them for want of new ideas. It is the selfsame mind throughout, and there is, indeed, 'no new thing under the sun,' not even a new mind. Since the matter of which the globe is composed is identical throughout, being capable neither of creation nor destruction, so is that mind identical throughout which has moulded and re-moulded that matter to express its growing thoughts and organisation."

The Growth and Value of London.—There are eight localities with a rateable value exceeding 1,000,000*l*. Next below this group we have the Wandsworth district, with 857,422*l*., followed by Plumstead and Lewisham with 718,493*l*., and Hackney with 695,580*l*. The Fulham district has also made an advance, rising from the thirty-fifth place to the twentieth, the houses being more than doubled, and the rateable value trebled. Poplar has taken a step upward from the twenty-first place to the thirteenth, the houses having increased in number by about one-half, and the rateable value raised from 218,256*l*. to 558,486*l*. In rateable value Poplar now stands next to St. James's, Westminster. St. George's, Hanover-square, despite its fashionable repute, has fallen from the fifth place to the seventh, but stands second for rateable value, whereas it was third on that account in 1856. Its rateable value has gone up from 893,976*l*. to 1,499,954*l*., the latter being about half the rateable value of the City. But St. George's has lost ground since 1856, for at that period it had nearly three-fourths the rateable value of the City, although far short in the number of houses. This wealthy parish does not increase greatly in the number of houses, but the average rateable value of a house in St. George's is exceptionally high, being nearly 142*l*. The City average is about twice as high, but we see that the average for all London is only 55*l*.—*Standard*.

New Reredos, St. Simon's, Bristol.—A new reredos has just been erected in the chancel of St. Simon's Church, Bristol. It is the work of Mr. F. Bell, of College-green, and consists of three canopies with ornamental finials and crockets in Painswick stone, supported on Devonshire marble shafts with carved capitals. In the panel on the north side are the interlaced signs,—Alpha and Omega,—on a gold ground, and on the south panel is the sacred monogram "I. H. S." likewise on a gold ground. On the centre panel is a Maltese cross in Cornish sepentine. There are also bosses of serpentine. The groundwork of the panels is diapered. The dado is of Maw's encaustic tiles, while the walls on either side of and level with the reredos are of Maw's tiles of a different pattern. The architects for the work are Messrs. Pope & Paul.

Cemeteries.—The Everton (Liverpool) Burial Board have appointed Messrs. Thomas D. Barry & Son, architects, Liverpool, to superintend the whole of the buildings, fencing, laying-out, and planting the new cemetery at Fazakerley, near Liverpool, consisting of fifty-four acres.

Consumption of Quicksilver.—The quicksilver mines of Almaden, in Spain, which are believed to have been wrought by the Carthaginians and the Romans, and which until lately constituted the chief source whence the supplies of quicksilver consumed throughout the world were drawn, are now (according to the *Mining Journal*) exposed to a severe competition from the quicksilver mines discovered in California. The gold-diggers in California, in the course of explorations, came upon particles of a reddish mineral of high specific gravity, which on analysis was found to be cinnabar, and there are now numerous quicksilver mines opened in California. The quicksilver is brought to market in iron bottles. The total present consumption per annum is about 100,000 bottles, of which California yields about 60,000 bottles, and Almaden about 25,000 bottles. The workmen in the mines cannot work more than three hours a day without the risk of being poisoned. Under proper arrangements, and with proper ventilation, the yield of the Almaden mines could, no doubt, be very much increased.

Lectures on Capital and Labour.—A course of four lectures to the members of Working Men's Clubs and others, similar to those which created so much interest last winter, will be delivered by Professor Leone Levi on Saturday afternoons at four o'clock,—the first taking place on the 20th inst. Prizes will be awarded to those who distinguish themselves by the Council of King's College, in the theatre of which institution the lectures will be delivered. Tickets of admission for those who are not members of Working Men's Clubs may be obtained at the Office of the Club and Institute Union, 150, Strand.

Blackpool Pier.—We understand that the South Jetty Company at Blackpool have decided to carry out an extension of their pier, from the plans of Messrs. Garlick, Park, & Sykes, engineers, of Preston, and that the contract has been let to Messrs. Lees Brothers, of Carlisle and Ilkestown. The cost of the works will be nearly 10,000*l*.

A New Blasting Material.—Lignose, invented by M. Falkenstein, is the name of a new blasting agent, and is made of woody fibre prepared with nitro-glycerine. It is stated to have about three times the force of black blasting powder, but is said to be very irregular in its action and extremely sensitive to moisture.

Items from Glasgow.—An inspection of the means of egress from theatres and singing saloons, and of factories in course of construction in Glasgow, is to be made by order of the Dean of Guild.——Lord Houghton has consented to unveil the Burns statue in Glasgow on the 25th inst.

Royal Institution.—At the first evening meeting, on Friday, January 19th, Professor Tyndall will discourse on "A Combat with an Infective Atmosphere."

Heath Grammar School Competition, Halifax. — Complaints reach us from unsuccessful competitors as to want of courtesy in returning designs:—the same old story.

TENDERS

For warehouse and dwelling, Raven-row, Whitechapel. Messrs. Wilson, Son, & Aldwinckle, architects. Quantities supplied:—

Coleman	£2,649 0 0
Palmer (too late)	2,371 0 0
Bangs	2,296 0 0
Mortar	2,279 0 0
Hearle	2,193 0 0

For the erection of school buildings, with teacher's residence, Norton's Cross, Monmouthshire, for the Skenfrith (U.D.) School Board. Mr. H. H. Lingen-Barker, architect:—

Foster, Brothers	£1,495 0 0
Ford	1,205 10 0
Powell (accepted)	1,085 17 0

For house in the Brakespeare-road, Brockley. Mr. J. O. Abbott, architect. Quantities by Mr. Geo. Jackson:—

Allpress	£2,056 0 0
Downs & Co.	2,032 0 0
Toser	1,961 0 0
Tyerman (accepted)	1,881 0 0

For the erection of seven houses in Bolingbroke-grove, Wandsworth, for Mr. James Lord. Mr. W. B. Brown, architect:—

Stephenson	£4,118 0 0
Colls & Sons	3,999 0 0
Bayes Bros. & Allen	3,897 0 0
Goodman	3,570 0 0
Warren, Smith, & Co.	3,475 0 0

For the erection of villa residence at Hornsey, for Mr. T. Thompson. Mr. W. B. Brown, architect:—

Goodman	£1,700 0 0

For making roads and laying pipe sewers at Clapham, for Mr. Adams Murphy:—

Pearson	£1,160 0 0
Tippen	1,120 0 0
Rickmoor	974 15 0
Woodard	950 0 0
Stubbs	933 0 0
Pissey	898 0 0
Reddin	877 0 0
Harris	797 0 0
Jackson	700 0 0

For building eight houses and shops in Charles-street, Shadwell. Mr. W. S. Witherington, architect:—

F. F. & J. Wood	£2,560 0 0!
Widdon	2,105 0 0
Judd & Hawkings	1,354 0 0!

For laying 460 ft. of pipe sewer, 15 in. in diameter, and 320 ft. of pipe sewer, 12 in. in diameter, in Tavistock-terrace, Upper Holloway, and other connected works. Mr. C. Higgins, surveyor. Quantities not supplied:—

Mattock Brothers	£993 0 0!
Rendall	443 8 0
Dunmore	367 0 0
Hall	346 18 4
Crockett	346 0 0
Pizzey	275 0 0
Foard	268 0 0
Taylor (accepted)	255 0 0!

TO CORRESPONDENTS.

C. G. V.—C. C. H.—J. U. T.—J. B. C.—Mr. F.—J. P.—S. T.—Messrs. H.—J. S.—C. L. R.—G. J.—A. C.—A. L. H.—Le F. & Co.—K. & Co.—W. B. (Chapman & Hall).—C. C. (need not trouble himself to copy from newspapers. Thanks).

We are compelled to decline pointing out books and giving addresses.

All statements of facts, lists of tenders, &c. must be accompanied by the name and address of the sender, not necessarily for publication.

NOTE.—The responsibility of signed articles, and papers read at public meetings, rests, of course, with the authors.

We give with this Number, as a Supplement, an INDEX and Title-page to the Volume of last year. A COLOURED TITLE-PAGE can be had, Gratis, on personal application.

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